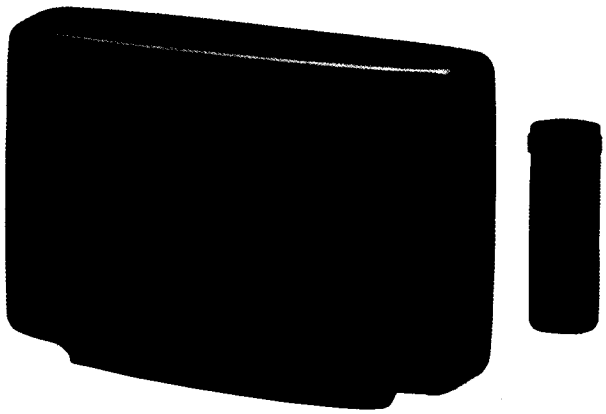
# KV-C2160B/C2161B
# KV-C2560B/C2960B
## RM-816

# SERVICE MANUAL

*French Model*
*KV-C2160B*
*Chassis No. SCC-F08K-A*
*KV-C2560B*
*Chassis No. SCC-F08F-A*
*KV-C2960B*
*Chassis No. SCC-F08E-A*

*Switzerland Model*
*KV-C2161B*
*Chassis No. SCC-E99G-A*



## AE-1C CHASSIS

| MODELS OF THE SAME SERIES | |
|---|---|
| KV-C2160B/C2161B | KV-X2550B/X2950B |
| KV-C2560B/C2960B | |
| KV-C2550B/C2950B | |

### SPECIFICATIONS

【KV-C2160B, KV-C2161B, KV-C2560B, KV-C2960B】

Television system B/G/H, L, I
Color system PAL, SECAM, NTSC3.58, NTSC4.43
Stereo system GERMAN stereo
Channel coverage B/G/H
VHF: E2-E12 UHF: E21-E69
CABLE TV (1) : S1-S41
CABLE TV (2) : S01-S05, M1-M10, U1-U10
L
VHF: F02-F-10 UHF: F21-F69
CABLE TV : B-Q
I
VHF: A-I UHF: B21-B69

Picture tube HI-Black Trinitron tube
(KV-C2160B/C2161B)
Approx. 54.5 cm (21 inches)
(Approx. 51 cm picture measured diagonally)
100° degree deflection
(KV-C2560B)
Approx. 63.5 cm (25 inches)
(Approx. 59 cm picture measured diagonally)
110° degree deflection
(KV-C2960B)
Approx. 72.4 cm (29 inches)
(Approx. 68 cm picture measured diagonally)
110° degree deflection

-Continued no next page-

MICROFILM

TRINITRON® COLOR TV
SONY®

## Inputs / Outputs Terminals

### REAR

| | |
|---|---|
| 21 pin Euro connector (CENELEC standard) | -Inputs for audio and video signals<br>-Inputs for RGB<br>-Outputs of TV video and audio signals |
| 2/21-pin Euro connector | -Inputs for audio and video signals<br>-Inputs for S-video<br>-Outputs for video and audio signals (selectable) |
| Audio output(vartable) | -phono jacks |

### FRONT

Video input phono jack

Audio inputs (L,R) phono jacks

S-video Inputs-4pin DIN

Headphone jack : stereo mini jack

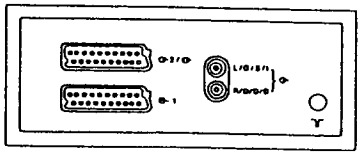
| | |
|---|---|
| Sound output | 15 W + 15 W |
| Power consumption | 87 Wh (KV-C2160B/C2161B)<br>101 Wh (KV-C2560B)<br>108 Wh (KV-C2960B) |
| Dimensions | Approx. 645×433×495 mm (w/h/d) (KV-C2160B/C2161B)<br>Approx. 720×497×480 mm (w/h/d) (KV-C2560B)<br>Approx. 814×558×508 mm (w/h/d) (KV-C2960B) |
| Weight | Approx. 25kg (KV-C2160B/C2161B)<br>Approx. 38kg (KV-C2560B)<br>Approx. 52kg (KV-C2960B) |
| Supplied accessories | RM-816 Remote Commander (1)<br>IEC designation R6 batteries (2) |

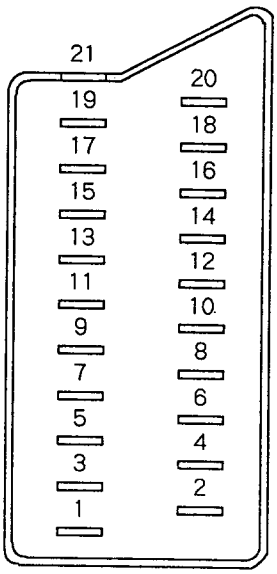
【RM-816】

| | |
|---|---|
| Remote control system | infrared control |
| Power requirements | 3V dc<br>2 batteries IEC designation R6 (size AA) |
| Dimentions | Approx. 75×221×23mm(w/h/d) |
| Weight | Approx. 230g (including batters) |
| Accessories supplied | IEC designation R6 batteries (2) |

**Design and specifications are subject to change without notice.**

21 pin connector (1 2)






| Pin No | 1 | 2 | 4 | Signal | Signal level |
|---|---|---|---|---|---|
| 1 | O | O | O | Audio output B (right) | Standard level : 0.5Vrms<br>Output impedance : Less than 1kohm * |
| 2 | O | O | O | Audio input B (right) | Standard level : 0.5Vrms<br>Input impedance : More than 10kohms * |
| 3 | O | O | O | Audio output A (left) | Standard level : 0.5Vrms<br>Output impedance : Less than 1kohm * |
| 4 | O | O | O | Ground (audio) | |
| 5 | O | O | O | Ground (blue) | |
| 6 | O | O | O | Audio input A (left) | Standard level : 0.5Vrms<br>Input impedance : More than 10kohms * |
| 7 | O | ● | ● | Blue input | 0.7 ± 3dB, 75ohms, positive |
| 8 | O | O | O | Function select (AV control) | High state (9.5 – 12V) : Part mode<br>Low state (0 – 2V) : TV mode<br>Input impedance : More than 10kohms<br>Input capacitance : Less than 2nF |
| 9 | O | O | O | Ground (green) | |
| 10 | O | O | O | Open | |
| 11 | O | ● | ● | Green | Green signal : 0.7V ± 3dB, 75ohms, positive |
| 12 | O | O | O | Open | |
| 13 | O | O | O | Ground (red) | |
| 14 | O | O | O | Ground (blanking) | |
| 15 | O | – | – | Red input | 0.7V ± 3dB, 75ohms, positive |
| | – | O | O | (S signal) croma input | 0.3V ± 3dB, 75ohms, positive |
| 16 | O | ● | ● | Blanking input (Ys signal) | High state (1 – 3V) Low state (0 – 0.4V)<br>Input impedance : 75ohms |
| 17 | O | O | O | Ground (video output) | |
| 18 | O | O | O | Ground (video input) | |
| 19 | O | O | O | Video output | 1V ± 3dB, 75ohms, positive Sync : 0.3V (– 3, + |
| 20 | O | – | – | Video input | 1V ± 3dB, 75ohms, positive Sync : 0.3V (– 3, + |
| | – | O | O | Video Input/Y (S signal) | 1V ± 3dB, 75ohms, positive Sync : 0.3V (– 3, + 10dB) |
| 21 | O | O | O | Common ground (plug, shield) | |

O Connected ●unconnected (open) * at 20Hz – 20kHz

4 Pin connector (S4)

| Pin No | Signal | Signal level |
|---|---|---|
| 1 | Ground | |
| 2 | Ground | |
| 3 | Y (S signal) input | 1V ± 3dB 75ohm, positive Sync 0.3V $^{-3}_{+10}$ dB |
| 4 | C (S signal) input | 0.3V ± 3dB 75ohm, positive |

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**CAUTION**

**SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.**

**ATTENTION**

**APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.**

**SAFETY-RELATED COMPONENT WARNING !!**

**COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

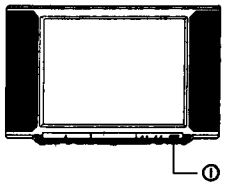
**ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!**

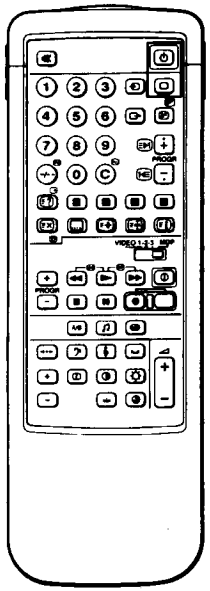
**LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.**

# SECTION 1
# GENERAL

## 1-1. SWITCHING ON/OFF

**After you have completed the basic preparation your TV is ready to be connected to the mains power supply (220/240V AC, 50Hz).**





### How to turn the TV on

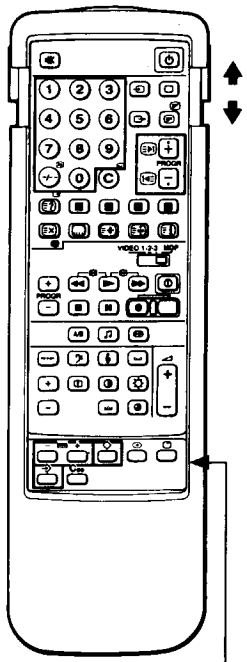
| Action | Result |
|---|---|
| Press ⏻ on the TV. | The TV will turn on.<br>**Note:** If the screen remains blank, the TV may be in the standby mode. Press 🖵 or any number button on the commander to switch it on. |

### How to turn the TV off

| | |
|---|---|
| **A Temporarily** | |
| Press ⏻ to enter standby mode. | The TV will be in standby. To return to the TV mode press 🖵 |
| **B Completely** | |
| Press ⏻ on the TV. | The TV will turn off. |



## 1-2. PRESETTING



**Note:** These buttons should be used in preset mode only.

After you have installed this TV you need to preset TV channels.

TV stations broadcast their channels at certain frequencies. You must preset these channels to programme numbers on this TV before you can watch the TV programmes.

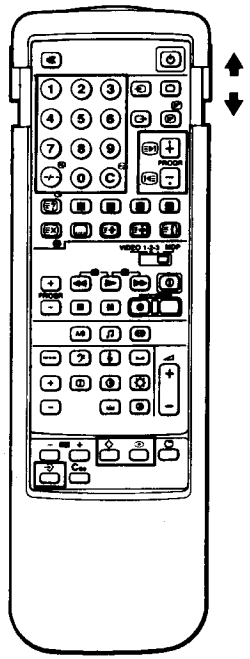
There are 60 spaces for storing these channels.

Slide open the full function side of the remote commander to reveal preset buttons.

### How to preset channels automatically

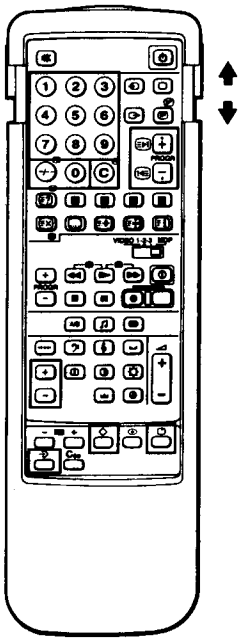
If you are unfamiliar with the channel numbers of the stations you wish to preset, use "How to preset channels automatically". If you are familiar with the channel numbers refer to "How to preset T.V. channels directly".

| Action | Result |
|---|---|
| **1** Press ◇ to enter the preset mode. | The programme number will start flashing. |
| **2** Press PROGR + or - or the number buttons to select the programme number to which you want to preset channels.<br>**Note**<br>To select a double-digit number, use the -/-- button. For example, if you want to choose 23, press -/--, 2, and then 3. | The programme number changes |
| **3** Press ⇔ + or - once to search forward or backward for channels. | When a channel is tuned in, the search will stop.<br>**Note**<br>If you want to skip a channel, press ⇔ + or ⇔ -. |
| **4** Press ◇ if you want to store the channel which is tuned in.<br>Press ◇ to exit preset mode without storing. | The channel is now stored and you have returned to TV mode. |
| **5** Repeat steps 1 to 4 to store the other channels. | |



## How to preset channels directly

| Action | Result |
|---|---|
| **1** Press ⇢ to enter the preset mode. | The programme number will start flashing. |
| **2** Press PROGR +/– or the number buttons to select the programme number on which you want to preset a channel.<br>**Note**<br>To select a double-digit number, use the -/-- button. For example, if you want to choose 23, press -/--, 2, and then 3. | The programme number changes. |
| **3** Press C.<br>If you want to select a cable channel, press C twice. | The indication "C--" ("S--" for a cable channel) starts flashing on the display. |
| **4** Select the channel number with two digits (e.g. 04) by pressing the number buttons.<br>**Note**<br>Press the second number within 5 seconds after the first one, otherwise the operation will be cancelled. | The channel number changes.<br>**Note** If you have made a mistake the letter "X" will appear. Repeat step 4 again. |
| **5** Press ◇ to store the channel which is tuned in.<br>Press ⇢ to exit the preset mode without storing. | The channel is now stored and you have returned to TV mode. |
| Repeat steps 1 to 5 to store the other channels. | |



## How to Name a Station

You can use up to five characters to "name" a channel or station (i.e. BBC1).

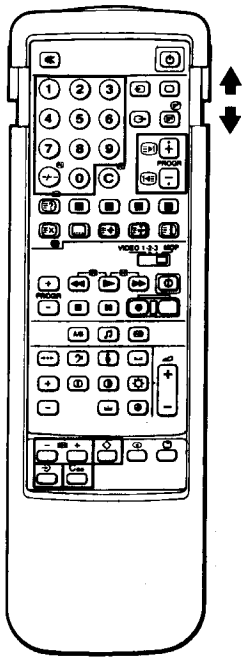
| Action | Result |
|---|---|
| **1** Select a programme number you want to name by pressing the PROGR +/– or the number buttons | The selected programme number will appear. |
| **2** Press ⇢. | The programme number starts flashing. |
| **3** Press ▢. | The first column of the station name indication will start flashing. |
| **4** Press + or – to select a letter in the alphabet, a number, or a blank space. | The letters of the alphabet, numbers and the space ("–") will appear sequentially. |
| **5** Press ▢. | The first character is now set and the second column will start flashing. |
| **6** Repeat steps 4 and 5 to set each letter. | |
| **7** Press ◇. | The channel name is now stored and you have returned to TV mode. |

## How to tune in a channel temporarily

You can tune a channel in temporarily, if it has not been preset.

| Action | Result |
|---|---|
| **1** Press C.<br>For cable channels, press C twice. | The indication "C" ("S" for cable channels) appears on the screen. |
| **2** Select the channel number with two digits by pressing the number buttons (e.g. for channel 4, first press 0, then 4.) | The channel is received, but it is not stored to any programme number. |

# 1-3. BASIC TV OPERATION



## How to Skip Programmes

Using the PROGR +/– buttons you can skip unused programme channel numbers. However, the skipped numbers may still be called up using the number buttons.

| Action | Result |
|---|---|
| **1** Press ⇢ to enter the preset mode. | The programme number will start flashing. |
| **2** Select the programme number that you want to skip by pressing PROGR +/– or the number buttons. | The programme number changes. |
| **3** Press C00. | The lowest channel number appears under the programme number. |
| **4** Press ◇. | The channel is now stored and you have returned to TV mode. |
| Repeat steps 1 to 4 to skip other programme numbers. | |

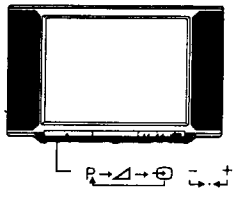
## How to Fine Tune Manually

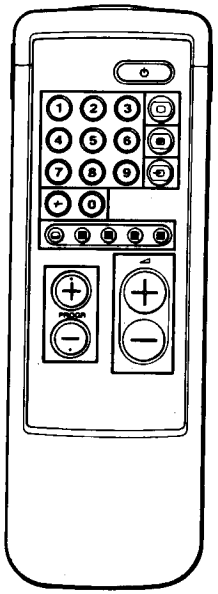
If the picture is distorted, you can fine tune the channel manually.

| Action | Result |
|---|---|
| Press ⇔ + or – repeatedly until the picture looks normal. | The indication ← F → appears on the screen. |
| Press ⇢ to enter the preset mode. | The programme number starts flashing. |
| Press ◇. | The fine tuning is stored. |

**Note:** The automatic fine tuning will function again when you preset the channel once more.

**Note:** Press ⊥ on door to open.





This section introduces you to the basic control functions which are available on the simple side of the remote commander.

## How to Select Programmes

Before you can select programmes make sure that you have preset channels.

| Action | Result |
|---|---|
| Press PROGR +/– or the number buttons. To select a double-digit number, use the -/-- button. For example, if you want to choose 23, press -/--, 2, and then 3. | The selected programme is displayed. |

## How to Adjust the Volume

| Action | Result |
|---|---|
| Press ◿ + or –. | The volume markers will appear. |

## How to Use Additional Functions

### How to operate with the buttons on the TV

You can also select programmes and adjust the volume using the P→◿→⊕ and →•← +/– buttons on the front of the TV.
For operation, first press the P→◿→⊕ button repeatedly so that the P (for programme) or ◿ (for volume) indication appears on the screen, and then adjust with the →•← +/– buttons.

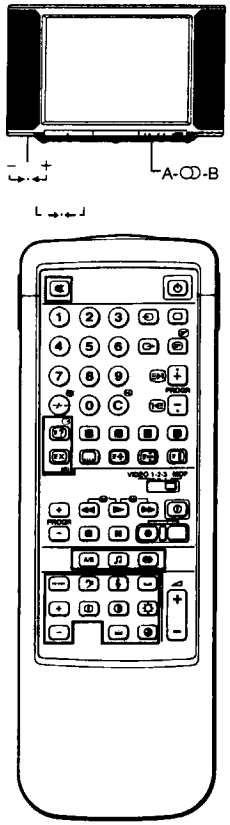
### How to view the teletext

Press ▤. To return to the TV mode, press ▢.
For details about the teletext operation.

### How to view the video input picture

Press ⊕ To return to the TV mode, press ▢. For further details.

# 1-4. ADVANCED TV OPERATION




This section shows you how to use convenient features and how to adjust the picture and sound to your taste.
Use the full-function side of the Remote Commander.

## How to use on-screen display and special sound features

You can enjoy the following convenient features.

| How to | Action | To resume normal picture/sound |
|---|---|---|
| Display on-screen indications | Press ⊡ | Indications disappear after some seconds |
| Display programme numbers | Press ⊡ twice | Press ⊡ twice again. |
| Mute the sound | Press 🔇. | Press 🔇 again. |
| Select a language in bilingual programmes. | Press A/B. The selected mode of the A-CD-B indicator on the TV lights up. | Press A/B. |
| Set the sound to music listening position | Press ♫. | Press ♫ again. |
| Use the space sound (special acoustic effect) | Press ⊛ | Press ⊛ again. |
| Request the time | Press ⊙. | Press ⊙ again. |

## How to adjust the picture and sound

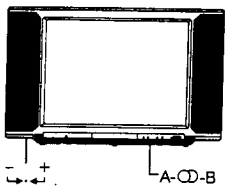
Although the picture and sound have been adjusted at the factory, you might want to adjust them to your own taste. To do this, please follow the steps.

**For picture adjustment**

| To Adjust: | Press: | Then: | Result: (+ ⟷ −) |
|---|---|---|---|
| **Picture:** | | | |
| Colour Intensity | ◕ | + / − | More ⟷ Less |
| Picture Contrast | ◑ | | More ⟷ Less |
| Brightness | ☼ | | Bright ⟷ Dark |
| Hue (for NTSC only) | | | Reddish ⟷ Greenish |
| | | | Sharp ⟷ Soft |
| **Sound:** | | | |
| Bass | | + / − | More ⟷ Less |
| Treble | | | More ⟷ Less |
| Balance | | | More Right/More Left |

To reset the picture and sound to factory set levels press →·←.

**On the set:**
Press →·← +/− buttons simultaneously.




## How to select a NICAM broadcast

This Sony TV has been designed to select Nicam broadcasts when available. Whenever a Nicam broadcast is received, the ⋈ symbol appears briefly on the screen. When the Nicam programme ends, or you switch channels to one without Nicam, the ⋈ symbol appears. To check if the channel you are watching is receiving Nicam, press the on screen display button ⊡, on the full function side of the remote commander.

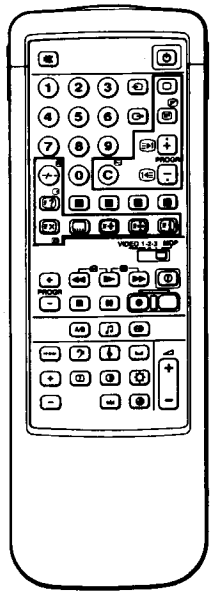
## How to select the sound of your choice

Nicam programmes can be broadcast in three ways. You may select the sound you want to hear in each of these, by pressing the ⊡ button on the full function side of the remote commander.

| Nicam service being broadcast | Action | The sound you hear | Indication on the TV A CD B |
|---|---|---|---|
| Stereo | | Stereo | ☼ ☼ |
| | Press A/B | Normal | ▭ ▭ |
| | Press A/B again to return to stereo | | |
| Mono | | Mono | ☼ ▭ |
| | Press A/B | Normal | ▭ ▭ |
| | Press A/B again to return to Nicam mono. | | |
| Bilingual | | Language A | ☼ ▭ |
| | Press A/B | Language B | ▭ ☼ |
| | Press A/B | Normally broadcast language | ▭ ▭ |
| | Press A/B again to return to language A | | |

* Depending on availability of service.

## 1-5. TELETEXT OPERATION (KV-C2161B only)



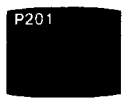
TV stations broadcast teletext programmes via the TV channels. To receive teletext programmes, use the buttons indicated in green on the full side of the Remote Commander.
With the simple side of the Remote Commander, only the basic operation is possible.

### How to View the Teletext

| Action | Result |
|---|---|
| **1** Select the channel which carries the teletext service you wish to see. | The channel changes on the screen. |
| **2** Press ▤. |  Teletext will appear. If the teletext signal is not broadcast, then p100 is displayed. |
| **3** Input three digits for the page number using the number buttons.<br>**Note**<br>If you make a mistake, type in any three digits, then re-enter the correct page number. | The numbers are entered on the screen. The requested page will appear in a few seconds. |
| **To return to the TV mode.**<br>Press ▢.<br>**To change the teletext channels**<br>First press ▢ to return to the TV mode, then repeat steps 1 to 3. | |

**Note**
If the signal of the TV channel is weak, teletext errors may often occur.

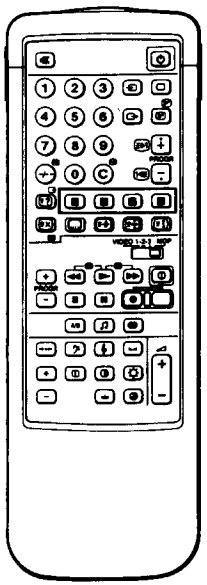
### How to Use the Advanced Features of Teletext

| How to | Action | Result (On-screen display) |
|---|---|---|
| Request the index page. | Press ⓘ (INDEX). |  The index page appears. |
| Request the subtitle page (p888). | Press ▢. | The subtitle page is displayed (p888). |
| Access the next or preceding page. | Press ⏭ (PAGE +) or ⏮ (PAGE −). |  The next or preceding page appears. |

| How to | Action | Result |
|---|---|---|
| Superimpose the teletext display on the TV programme. | Press ▤ once if you are in text mode, or press ▤ twice if in TV mode.<br>To return to the normal teletext display press ▤ again. |  The teletext displays are superimposed on the TV programmes. |
| Prevent a teletext page from being updated or changed. | Press ⏸ (HOLD).<br>To resume normal teletext reception, press ▤ (TEXT/MIX). |  The HOLD symbol ( ⏸ ) appears on the screen and the chosen sub-page is held until you cancel. |
| Enlarge the teletext display. | Press ⏫ once to enlarge the upper half. Press twice to enlarge the lower half.<br>Press again to restore the normal display. |  The upper half is enlarged. |
| Reveal concealed information (e.g. answers to a quiz). | Press ⓡ (REVEAL).<br>Press again to conceal the information. |  The information is revealed. |
| Watch the TV programme while waiting for a requested page to be displayed. | **1.** Request a new page. | The numbers are entered. |
| | **2.** Press ⓧ (TEXT CL). | The TV program is displayed, and the requested page number and other teletext data appear at the top of the screen. |
| | **3.** When the requested page has been captured, the page number remains and the other data disappears. |  |
| | **4.** Press ▤ to view this page. | The requested page is displayed. |
| Have a requested page displayed at a pre-determined time. | **1.** Request a desired page. | The requested page is displayed. |
| | **2.** Press ⓣ (TP ON). | "T****" appears at the bottom of the screen. |
| | **3.** Enter the time you want to have the page displayed with four digits using the number buttons. (For example, enter 0730 for 7:30 AM.) | The time is entered on the screen. |
| | **4.** Press ⓧ (TEXT CL) to watch the TV programme until the requested time. | At the requested time, the page number will be displayed at the top of the screen, to view this page, press ▤. |
| | **To cancel the request**<br>Display the teletext page, then press ⓞ (TP OFF). | The request is cancelled. To resume TV mode press ▢. |

Some of the features may not be available depending on the Teletext service.

# 1-6. OPTIONAL CONNECTIONS/OPERATIONS



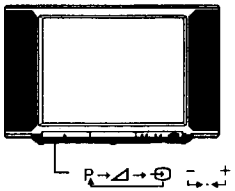
## How to use the FASTEXT Feature

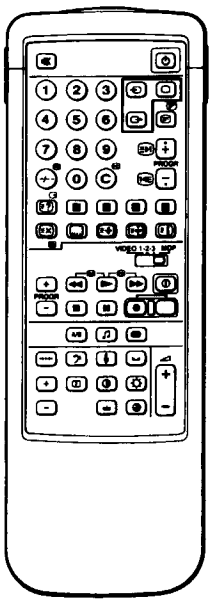
FASTEXT feature allows you to access pages quickly with one key operation.
When a FASTEXT page is broadcast, a colour coded menu appears at the bottom of the screen. Each coloured prompt corresponds to the coloured buttons on either side of your Remote Commander.

**Operation**

| Action | Result |
|---|---|
| Press one of the coloured buttons which corresponds to the coloured prompt on the teletext. | The selected teletext page appears. |

**Note**
Correct FASTEXT operation depends on the necessary signals sent from the TV station.





## How to view the video input picture

You can view the picture of video equipment connected to the input terminals by selecting the input mode.

**Operation**

| Action | Result | |
|---|---|---|
| Press repeatedly to select the desired input. | 1 | Symbol for the selected input appears. (See the table below.) |
| To return to the TV mode, press the button. | | |

**Input modes**

| Symbol | Result |
|---|---|
| 1 | Audio/video input through the connector. |
| | RGB input through the connector. |
| 2 | Audio/video input through the 2/ connector. |
| 2 | S video input (from a VTR equipped with an S video output) through the 2/ connector. |
| 3 | Audio/video input through and jacks on the front. |
| You can also select the input mode using the button on the TV. In this case, first select and then press +/– buttons to select the input. | |

## How to select the Output

The 2/ connector outputs four kinds of audio/video signals. You have to select one of them as follows.

**Operation**

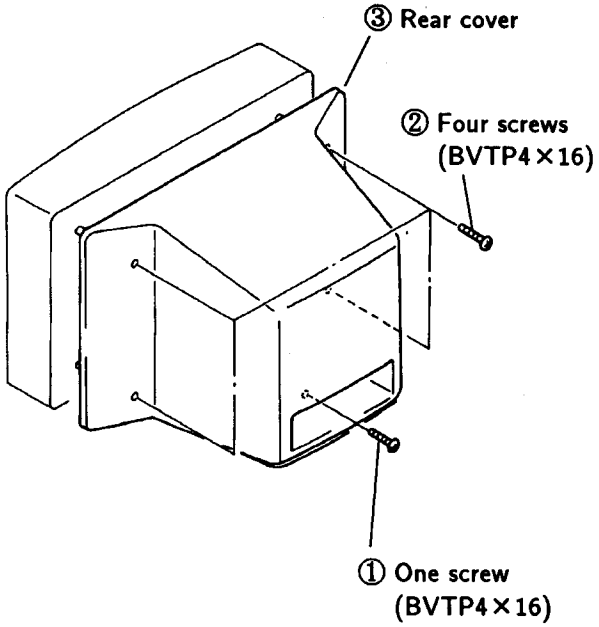
| Action | Result | |
|---|---|---|
| Press repeatedly to select the desired input. | 1 | Symbol for the selected output appears. (See the table below.) |

**Output modes**

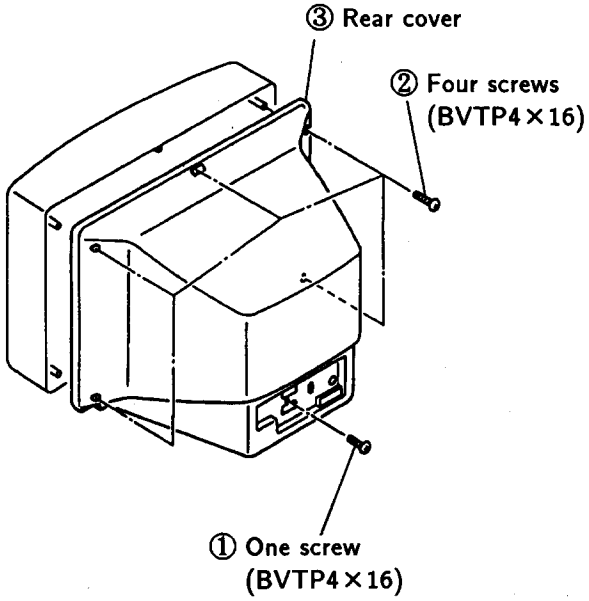
| Symbol | Output from |
|---|---|
| 1 | The audio/video signal from the 1 connector |
| 2 | The audio/video signal from the 2/ connector |
| 3 | The audio/video signal from the connectors. |
| TV | The audio/video signal from the aerial terminal. |

# SECTION 2
# DISASSEMBLY

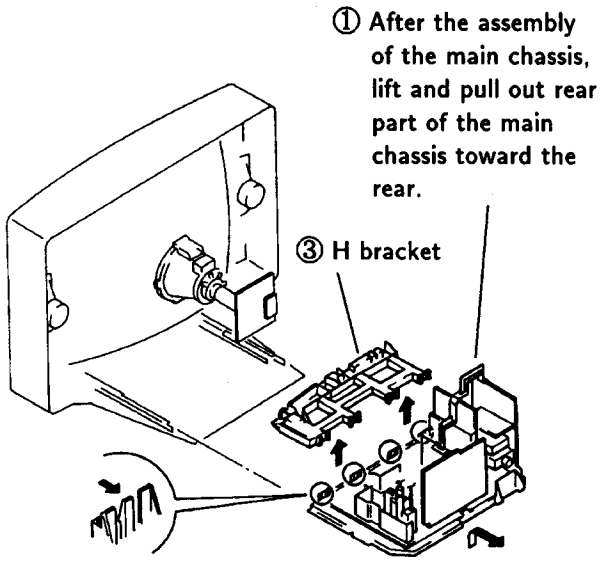
## 2-1-1. REAR COVER REMOVAL (21 inch)




## 2-1-2. REAR COVER REMOVAL (25inch, 29inch)

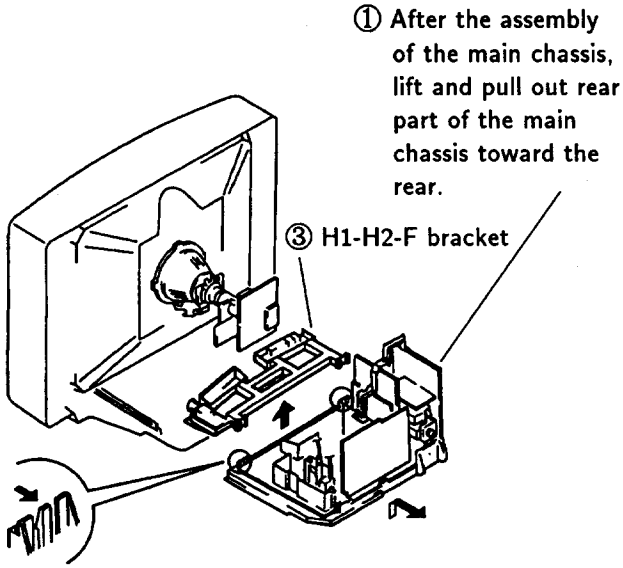



## 2-2-1. CHASSIS ASSEMBLY REMOVAL (21inch)



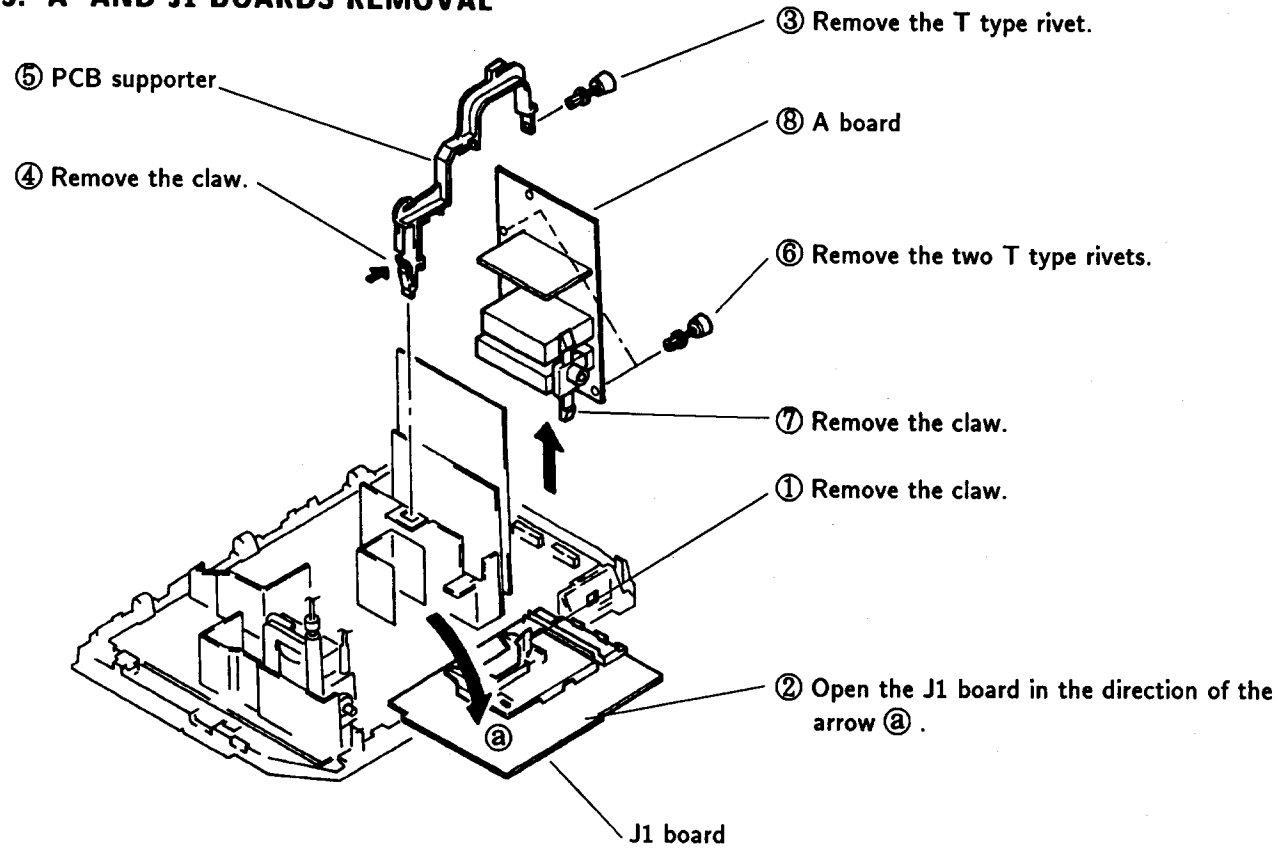

② Push the four claws of the main chassis in the direction of arrow and remove the H bracket upwards.

## 2-2-2. CHASSIS ASSEMBLY REMOVAL (25inch, 29inch)

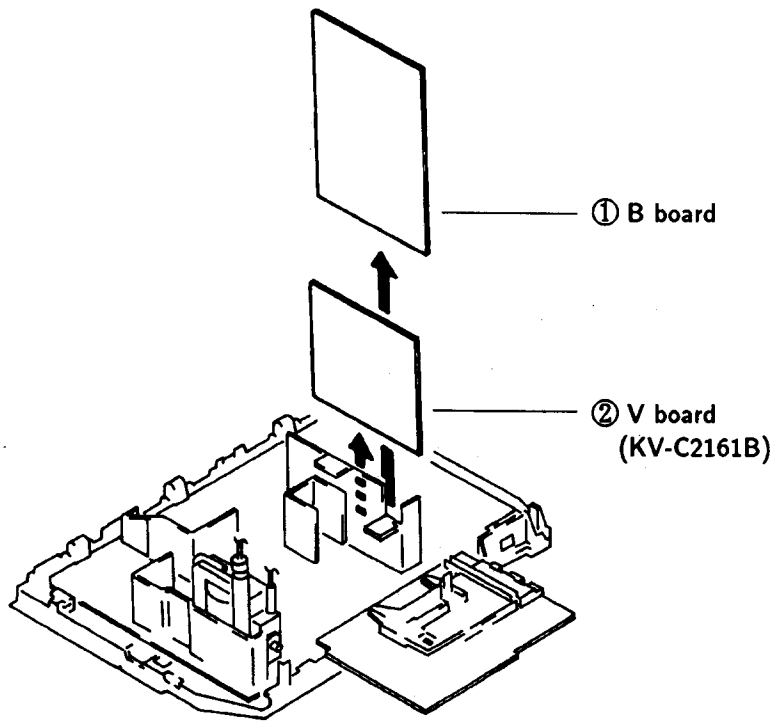



② Push the two claws of the main chassis in the direction of arrow and remove the H1 -H2-F bracket upwards.

## 2-3. A AND J1 BOARDS REMOVAL



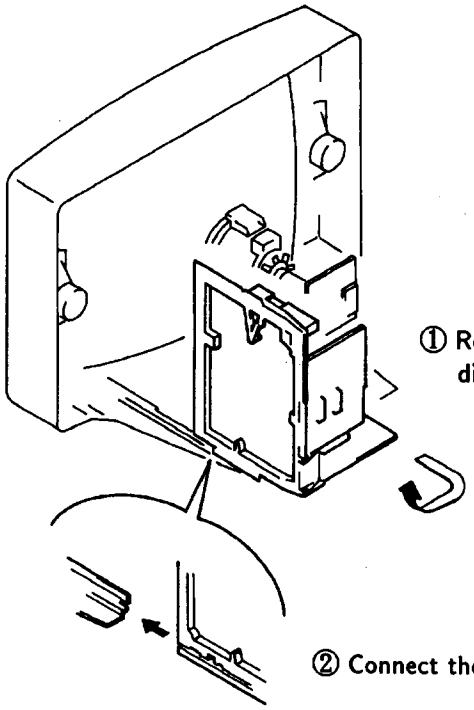

## 2-4. B AND V BOARDS REMOVAL




Note : 10 pin extension cable (S-0945-001-0)

## 2-5-1. SERVICE POSITION (21inch)

* Remove the bracket from the main chassis assembly and then perform the following servicing. (Refer to 2-2-1. CHASSIS ASSEMBLY REMOVAL.)

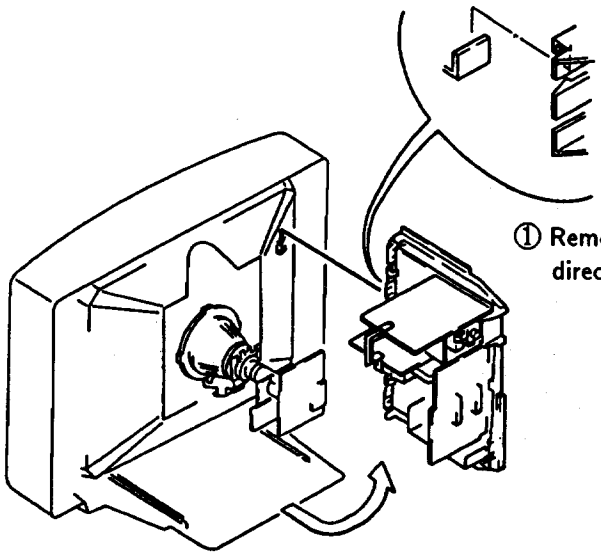


① Remove main chassis assembly in the direction of the arrow.

② Connect the main chassis assembly to the holder.

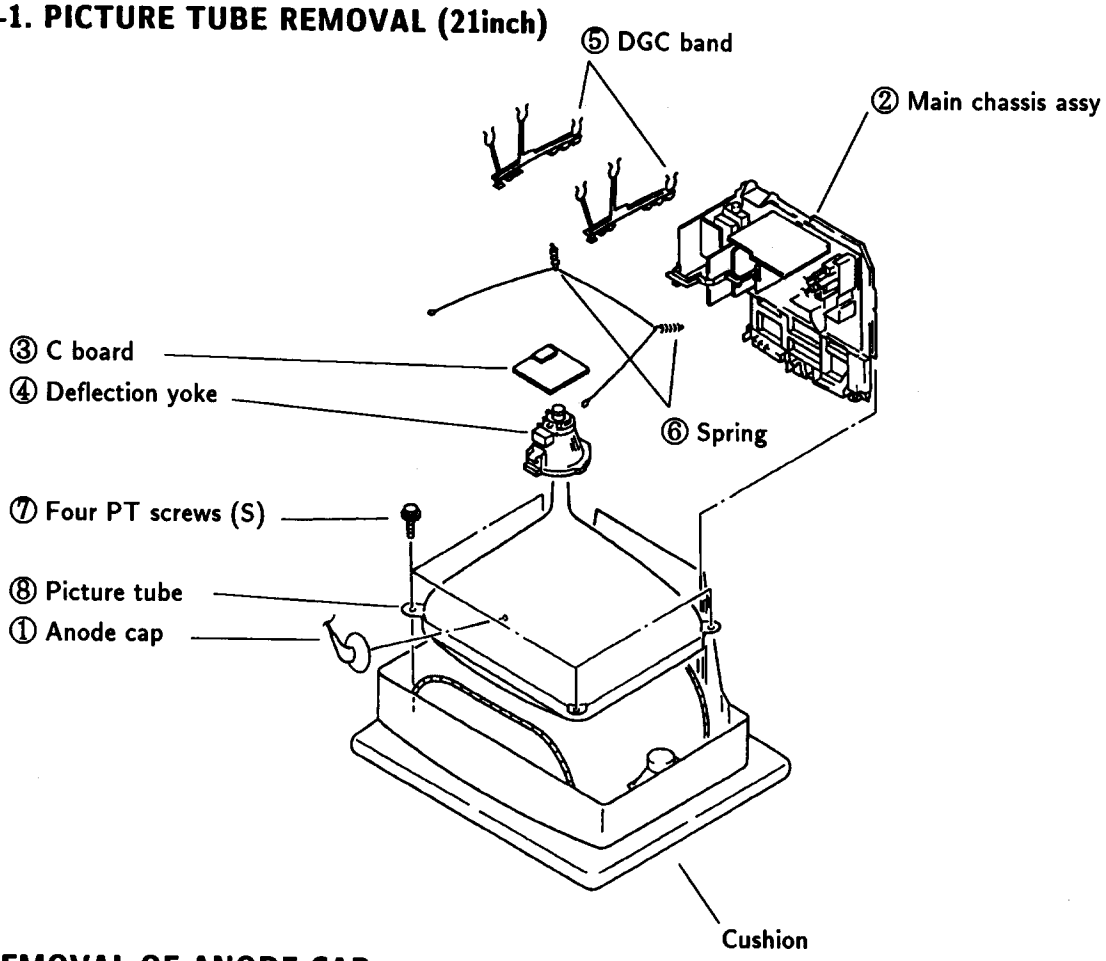
## 2-5-2. SERVICE POSITION (25inch, 29inch)

* Remove the connector bracket from the main chassis assembly and then perform the following servicing. (Refer to 2-2-2. CHASSIS ASSEMBLY REMOVAL.)



① Remove main chassis assembly in the direction of the arrow.

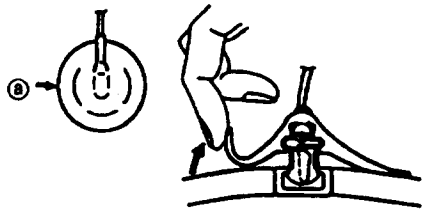
## 2-6-1. PICTURE TUBE REMOVAL (21inch)



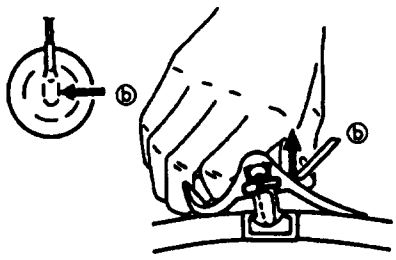

### • REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

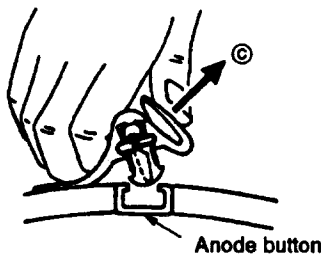
#### • REMOVING PROCEDURES




① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.




② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



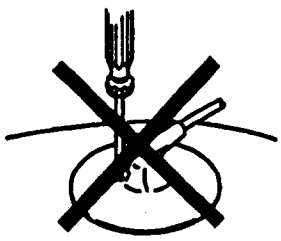

③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

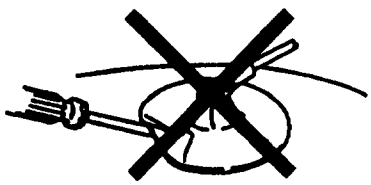
#### • HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

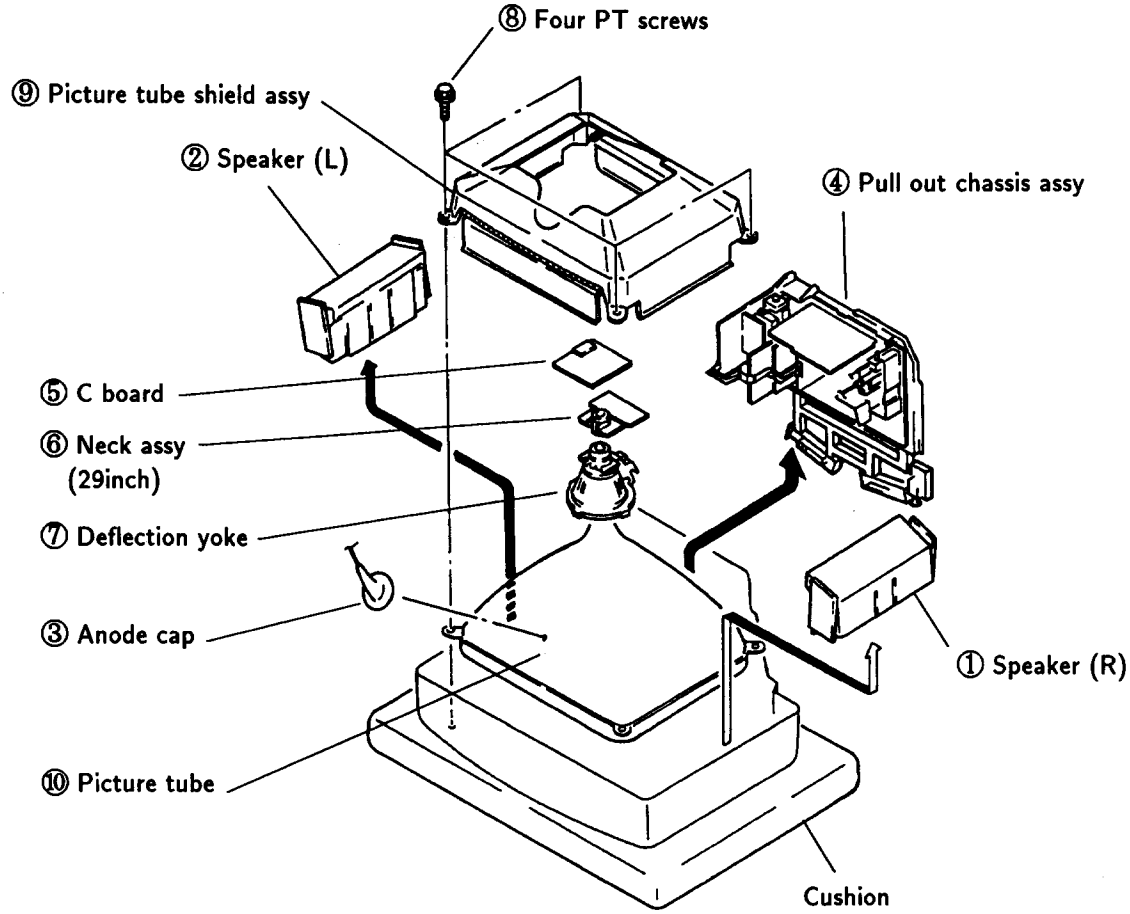
② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.





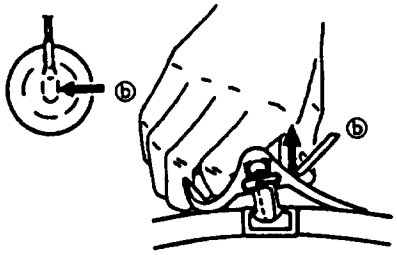
## 2-6-2. PICTURE TUBE REMOVAL (25inch, 29inch)



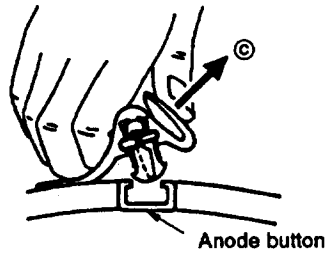

### • REMOVAL OF ANODE-CAP

#### • REMOVING PROCEDURES


① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.




② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.




③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

#### • HOW TO HANDLE AN ANODE-CAP

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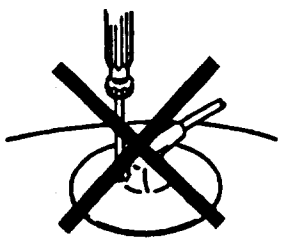
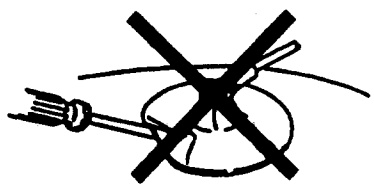
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.





# SECTION 3
# SET-UP ADJUSTMENTS

● The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

● These adjustments should be performed with rated power supply voltage unless otherwise noted.

The controls and switch below should be set as follows unless otherwise noted :

◑ CONTRASTcontrol ····· 80%(or Normal by commander)

☼ BRIGHTNESS control ····· 50%

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G 2) and White Balance

**Note:** Test Equipment Required.

1. Color bar/Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital multimeter
5. Oscilloscope

**Preparation: (21 inch, 25 inch)**

● Set the side of the unit with the PICTUE TUBE so that it faces east or west in order to reduce the influence of external magnetic force.

● Turn the power switch for the unit ON and erase the magnetic force using a degausser..

## 3-1. BEAM LANDING

Demagnetize with a degausser

1. Input a raster signal with the pattern generator.
   CONTRAST, BRIGHTNESS } normal
2. Turn the raster signal of the pattern generator to red.
3. Move the deflection yoke backward, and adjust with the purity control so that red is in the center and blue and green are at the sides evenly. (Fig.3-1 - 3-3)
4. Move the deflection yoke forward, and adjust so that the entire screen becomes red. (Fig.3-1)
5. Switch over the raster signal to blue and blue and confirm the condition.
6. When the position of the deflection yoke is determined,tighten it with a deflection yoke mounting screw.
7. When landing at the corner is not right, adjust by using the disk magnets. (Fig.3-4)

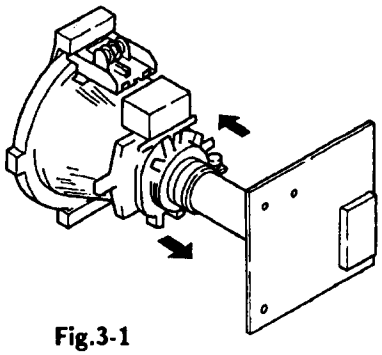


Fig.3-1

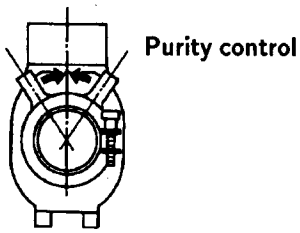



Fig.3-2

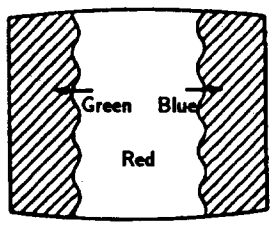



Fig.3-3

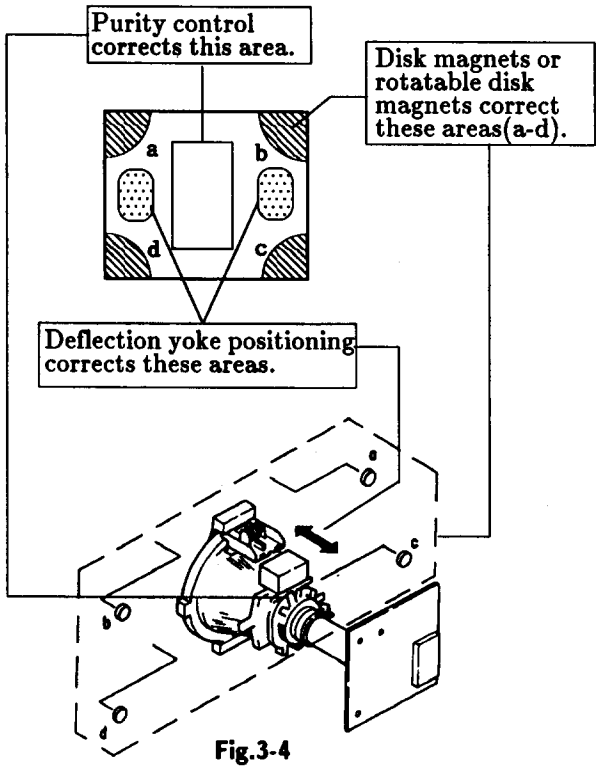


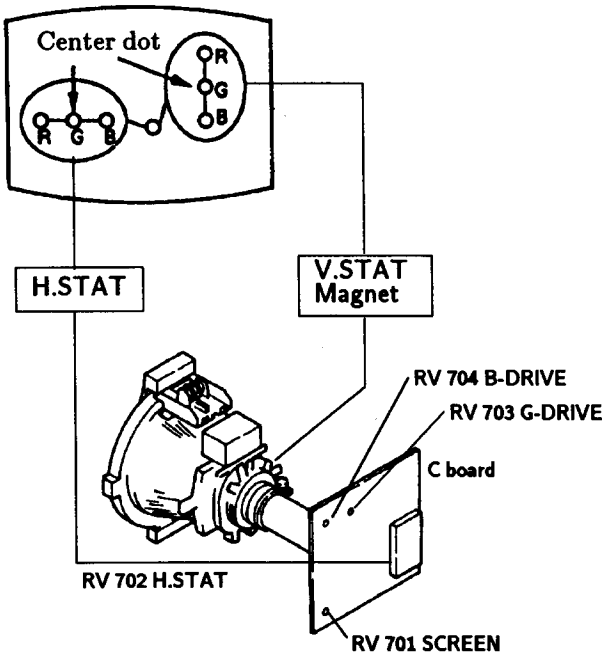

Fig.3-4

## 3-2. CONVERGENCE

**Preparation:**

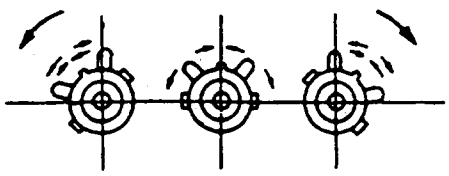
- Before starting, perform FOCUS, H.SIZE, and V. SIZE adjustments.
- Set BRIGHTNESS control to minimum.
- Feed in the dot pattern.

**(1) Horizontal and Vertical Static Convergence**

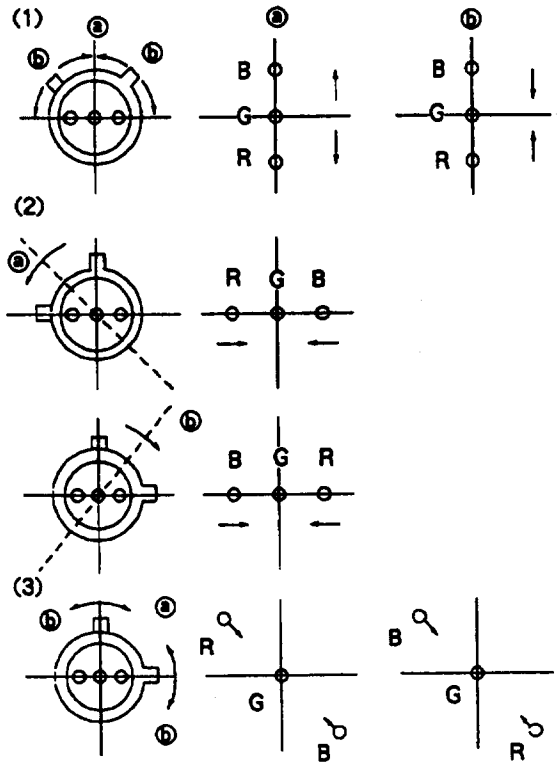



1. Adjust H.STAT VR to converge red, green and blue dots the in center of the screen.(Horizontal movement)
2. Adjust V. STAT magnet to converge red, green and blue dots in the center of the screen. (Vertical movement)
3. If the red, green and blue dots do not converge on the center of screen with H.STAT VR, perform horizontal convergence adjustment using H.STAT VR and V.STAT magnet as shown below. (In this case, H.STAT VR and V.STAT magnet effect each other.)

- Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.

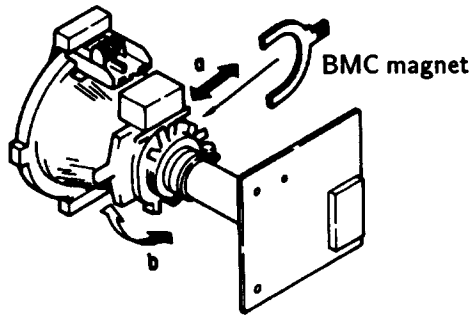


4.When the V.STAT magnet is moved in the direction of arrow ⓐ and ⓑ, red, green and blue dots move as shown below.



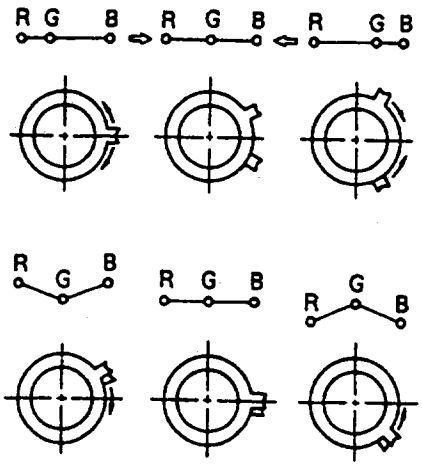

(KV-21 inch only)

If the red and blue dot do not converge with green dots, perform following steps.
Move BMC magnet (a) to correct insufficient H.static convergence.
Rotate BMC magnet (b) to correct insufficient V.static convergence.
In either case, repeat Beam Landing Adjustment.

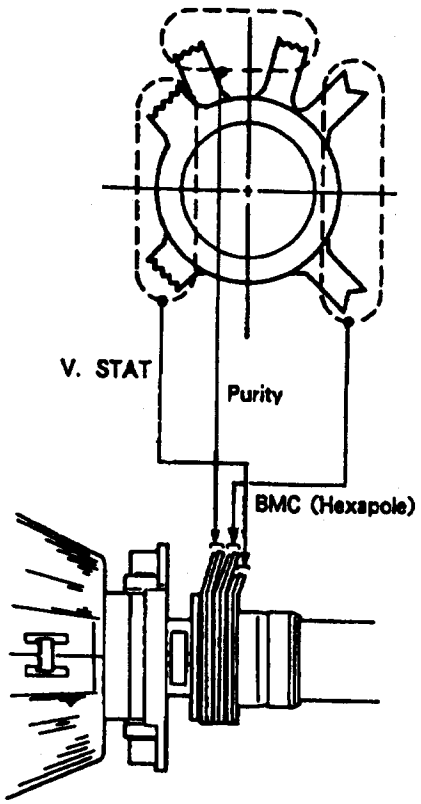


( KV-25 inch only)

- Operation of BMC (Hexapole) Magnet




- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

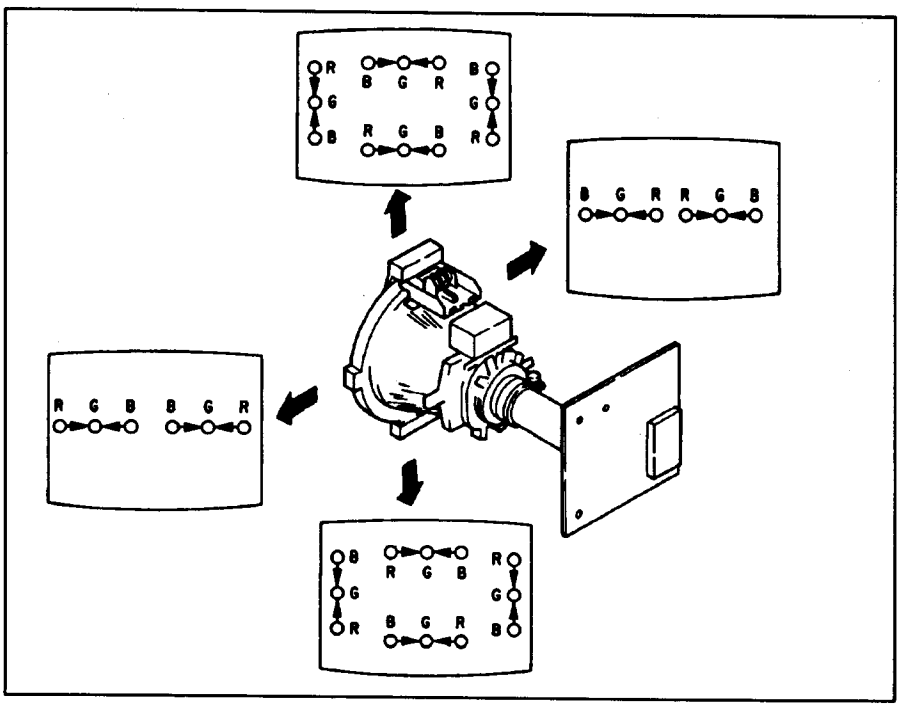



**(2)Dynamic Convergence Adjustment**

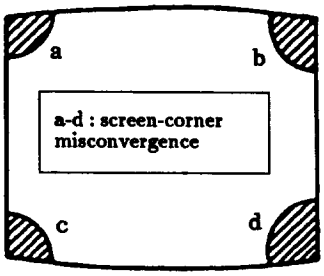
**Preparation:**

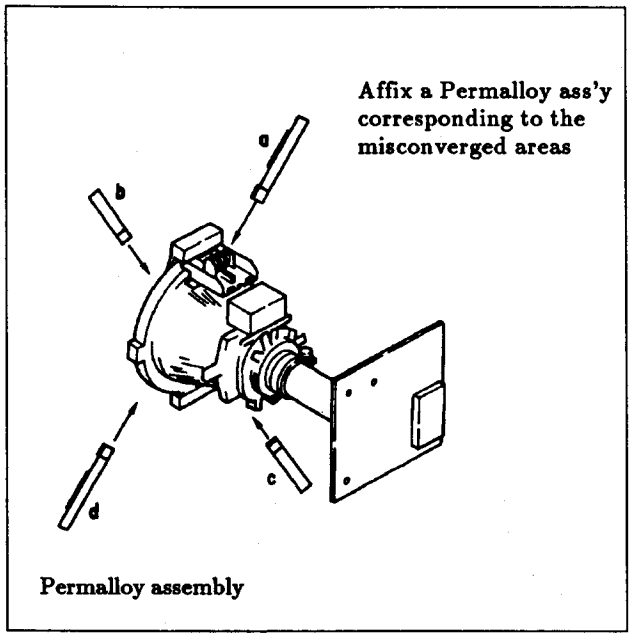
● Before starting perform Horizontal and Vertical static convergence Adjustment.

1. Slightly loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergenceas shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.



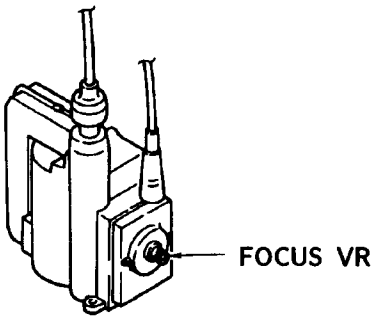
**(3) Screen-corner Convergence**



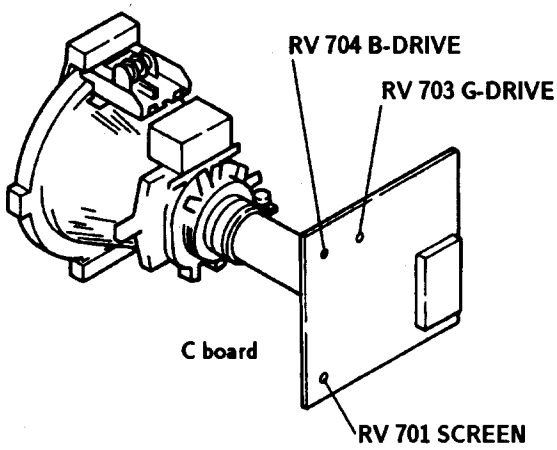




## 3-3. FOCUS

Adjust FOCUS so that the whole screen is in best focus.




## 3-4. SCREEN (G 2) and WHITE BALANCE




Screen (G 2) Setting

1. Input dot signal from the pattern generator.
2. Set the picture BRIGHTNESS control to minimum level.
3. Apply 170 V DC to the cathodes of R,G and B from an external power power source.
4. While watching the picture, adjust the G 2 volume (RV701) immediately before fly-back line disappears.

White Balance Adjustment

1. Input all-white signal from the pattern generator.
2. Adjust the BRIGHTNESS and COLOR controls to the standard level.
3. Adjust the following using RV 704 (B DRIVE) and RV 703 (G DRIVE)

In the following adjustments, the CONTRAST, COLOR and BRIGHTNESS controls are set to normal unless otherwise specified.

**Preparations : (29 inch)**

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

## 3-5. BEAM LANDING

1. Input the white signal with the pattern generator.
   Contrast } normal
   Bightness }
2. Position neck ass'y as shown in Fig 3-6.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.
   (See Figures 3-5 through 3-7.)
5. Move the deflection yoke forward and adjust so that entire screen is red. (See Figure 3-5.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 3-8.)

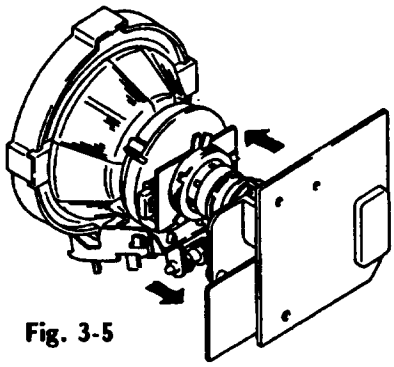


Fig. 3-5

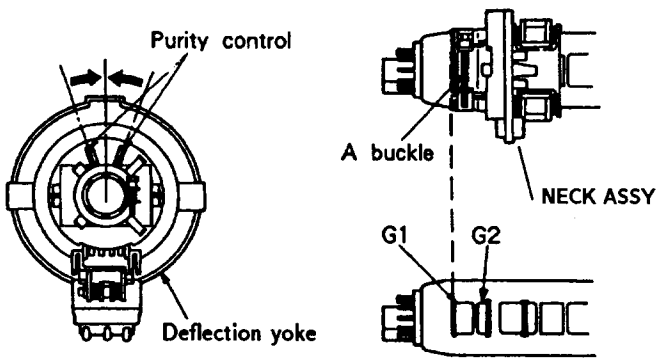



Fig. 3-6

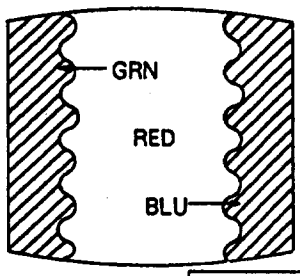



Fig. 3-7

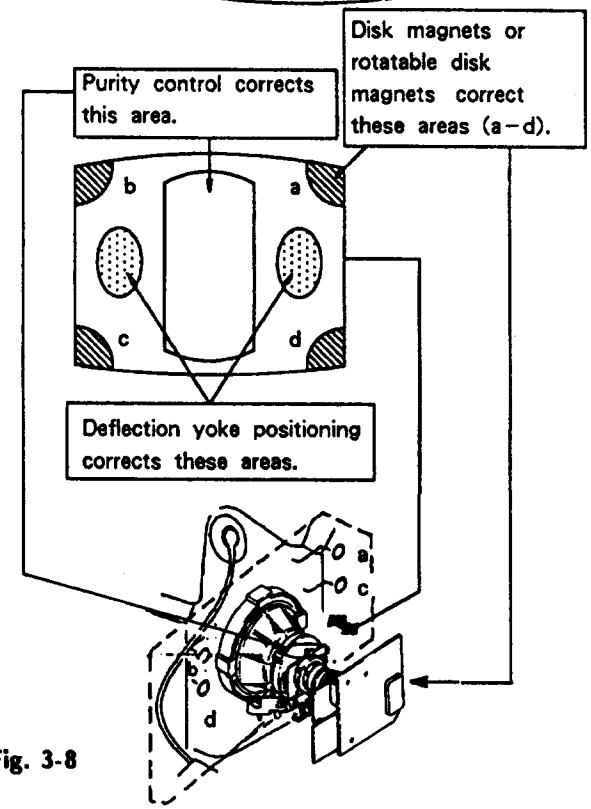


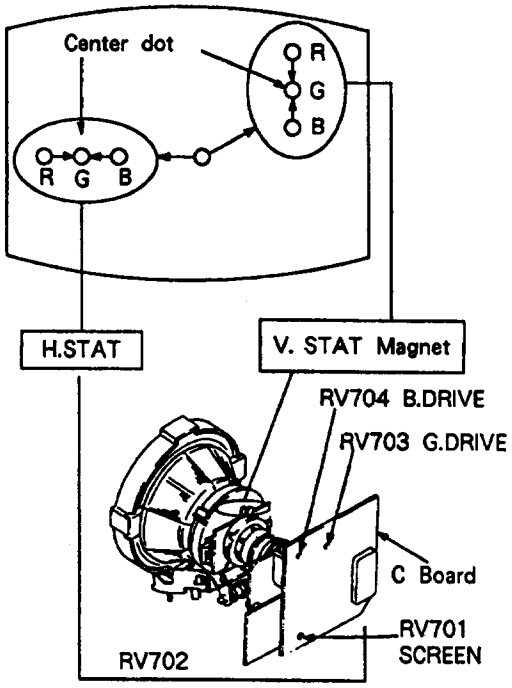

Fig. 3-8

## 3-6. CONVERGENCE

**Preparations :**

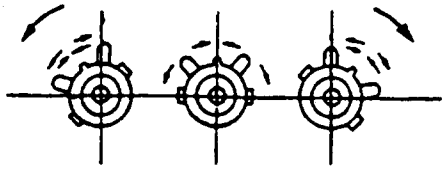
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

### (1) Horizontal and vertical static convergence

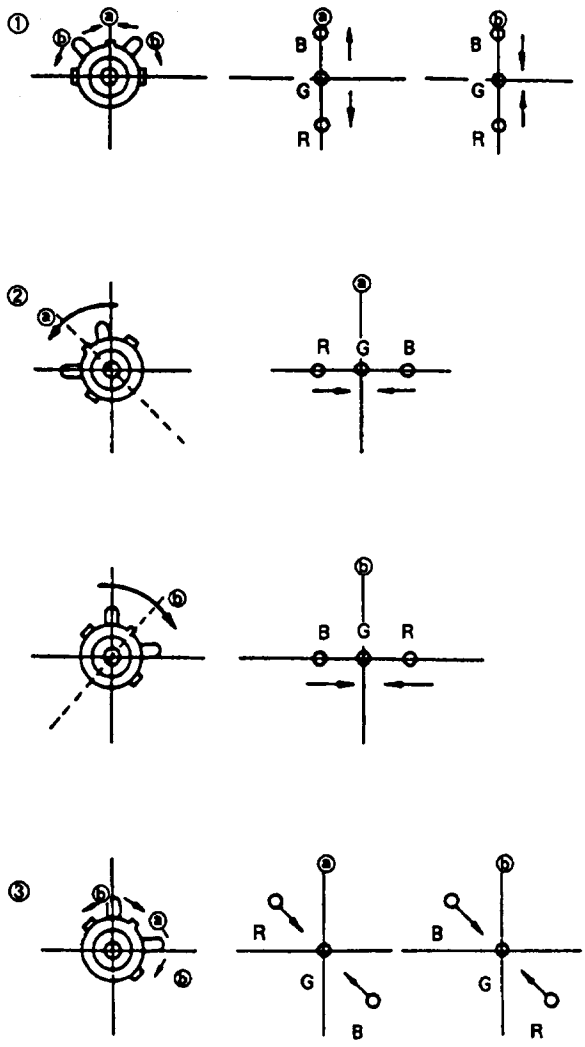



1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

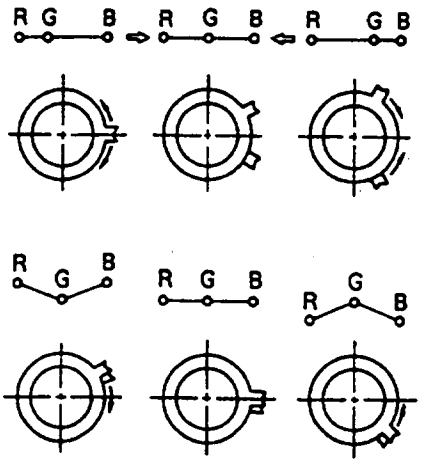
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

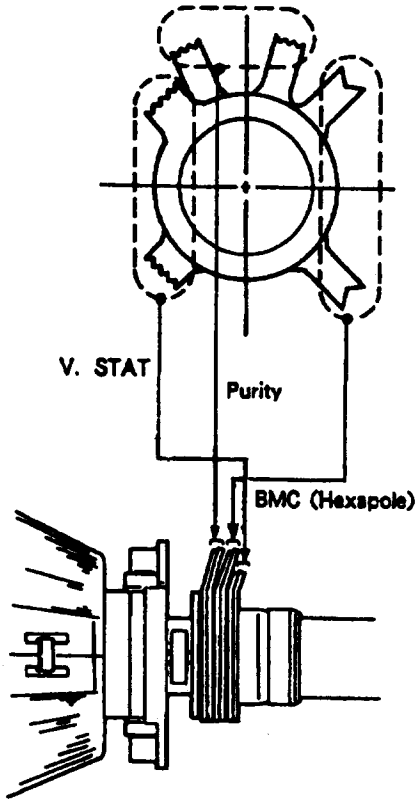


4. If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet



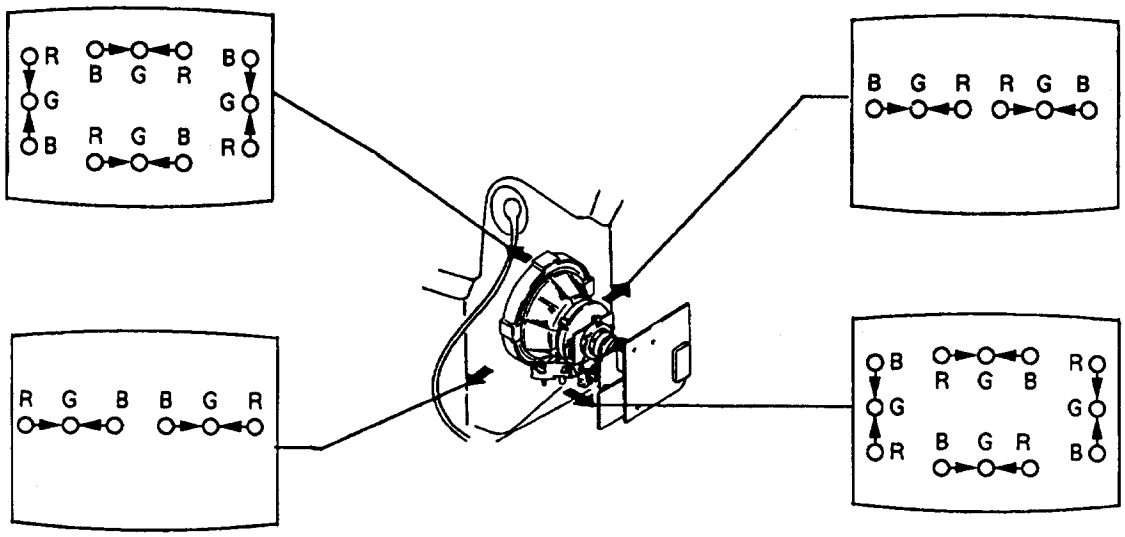




- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

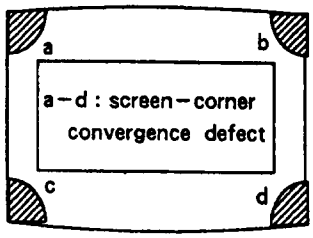
**(2) Dynamic convergence adjustment**
**Preparations :**

Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

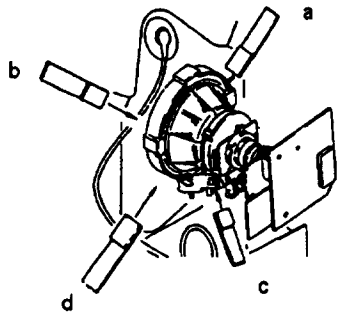
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the defelection yoke spacer.



**(3) Screen corner convergence**



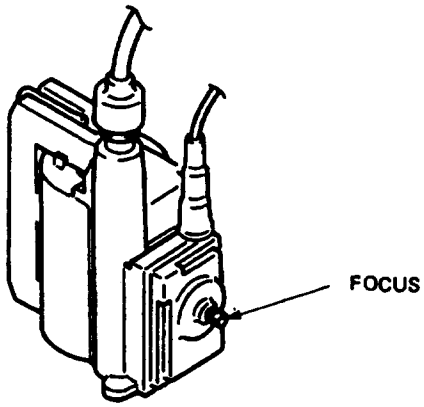

Install the permalloy assembly for the section with faulty.




Permalloy

## 3-7. FOCUS

Adjust the focus to optimize the screen.




## 3-8. WHITE BALANCE

**[ Screen G2 setting ]**

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 170V DC to the R, G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

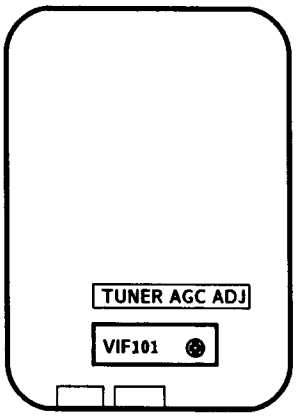
**[ White balance adjustment ]**

1. Input an all-white signal from the pattern generator.
2. Set the picture brightness and color controls to their normal levels.
3. Use the RV704 (B Drive) and RV703 (G Drive) to adjust white balance.

In the adjustments below, have the picture color and brightness settings at their normal levels unless there is a specific instruction to the contrary.

# SECTION 4
# CIRCUIT ADJUSTMENTS

## 4-1. A BOARD ADJUSTMENTS

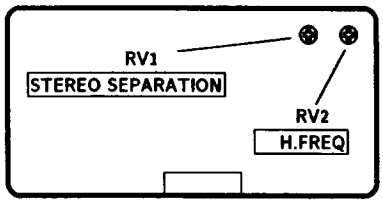



A BOARD (COMPONENT SIDE)

### TUNER AGC ADJUSTMENT (AGC VR)

1. Align with an appropriate signal between stations.
2. Adjust AGC VR so that snow noise and cross modulation just disappear from the picture.

### IFG5.5S SIF




IFG5.5S SIF -component side-

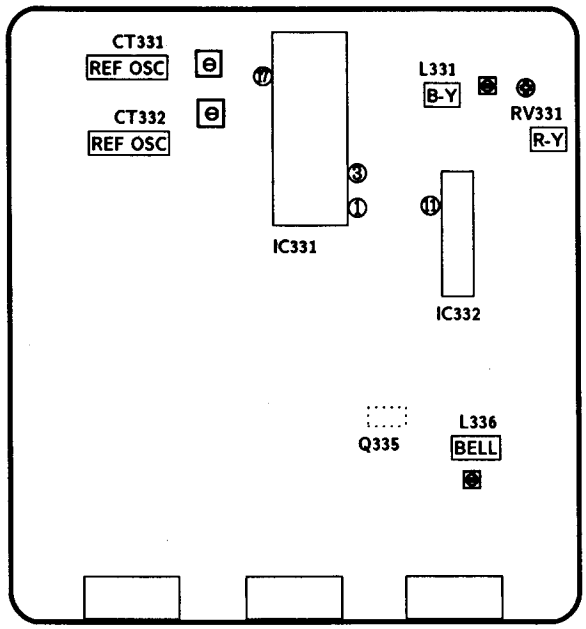
### STEREO SEPALATION ADJUSTMENT (RV1)

1. Input stereo signals. (L-CH 400Hz, R-CH 1KHz)
2. Check the stereo indicator.
3. Connect on oscilloscope to pin⑧ (CH1) of CN1 through band pass filter of 1KHz
4. Adjust RV1 so that 1KHz voltage goes down to the minmum.

### H FREQ (RV2)

1. Input a PAL COLOR BAR signal, then connect a jumper between pin⑫ IC4 and GND.
2. Connect a frequency counter to pin④ IFG5.5S (HP) of CN1 through a probe of 10 : 1.
3. Adjust RV2 (H.FREQ) 15.625±50Hz.
4. After adjustment, remove the jamper.

## 4-2. B BOARD ADJUSTMENTS




B BOARD (COMPONENT SIDE)

### REFERENCE OSCILLATOR ADJUSTMENT (CT332 8.8MHz)

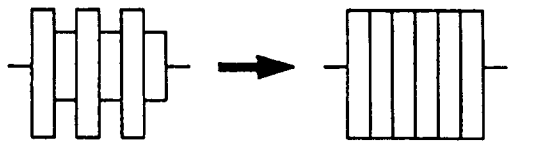
1. Input a PAL color bar signal.
2. Ground pin ⑰ of the IC331.
3. Adjust CT332 to obtain synchronization.

### REFERENCE OSCILLATOR ADJUSTMENT (CT331 7.16MHz)

1. Input an NTSC358 color bar signal.
2. Ground pin ⑰ of IC331.
3. Adjust the CT331 to obtain synchronization.
4. Remove the jumper grounding pin ⑰ of IC331.

### BELL FILTER ADJUSTMENT (L336)

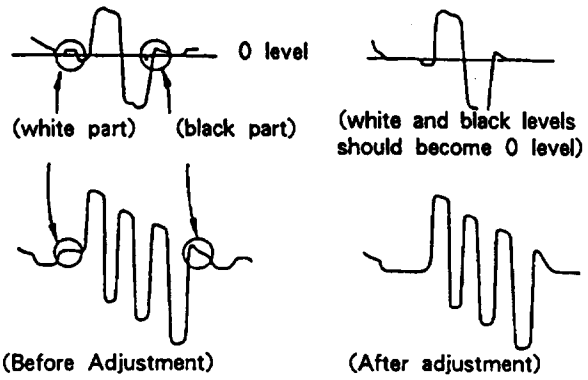
1. Input a SECAM color bar signal.
2. Connect the oscilloscope to the emitter of Q335.
3. Adjust L336 so that the waveform is flat.



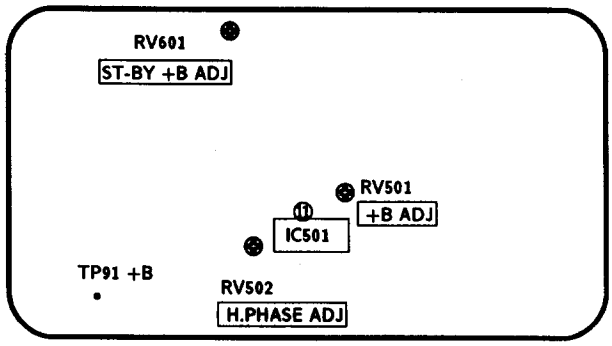
<Before Adjustment> <After Adjustment>

**DISCRIMINATION ADJUSTMENTS (RV331 and L331)**

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to pin ① of IC331.
3. Adjust RV331 until the white and black sections of the waveform at pin ① are at the 0 level. Connect the oscilloscope to pin ③ of IC331.
4. Adjust L331 until the white and black sections of the waveform at pin ③ are at the 0 level.




## 4-3. D BOARD ADJUSTMENTS




D BOARD (COMPONENT SIDE)

**+B ADJUSTMENT (RV501)**

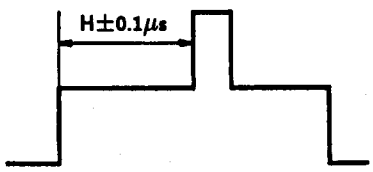
1. Connect the digital multimeter to TP91.
2. Adjust RV501 to obtain 135±0.2V.

**ST-BY +B ADJUSTMENT (RV601)**

1. Put the system into ⏻ standby mode (remote commander).
2. Connect the digital multimeter to TP91.
3. Adjust RV601 to obtain 135±3V.
4. Take the system out of ⏻ standby mode (remote commander).

**H.PHASE ADJUSTMENT (RV502)**

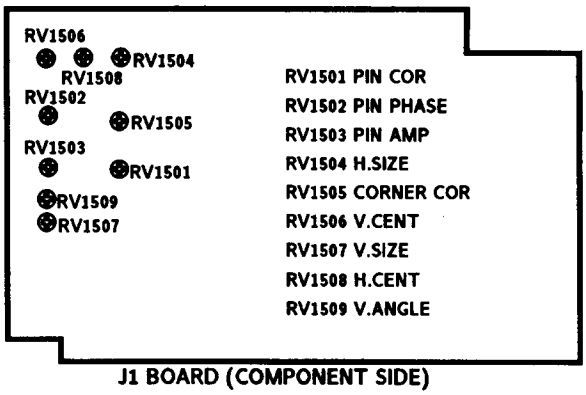
1. Input a PAL color bar signal.
2. Set the picture and brightness controls to their normal levels.
3. Set RV1508 (H.CENT) to its mechanical center.
4. Connect the oscilloscope to pin ⑪ (SCP) of IC 501.
5. Rotate RV502 to adjust to H±0.1μs.




Standard of H. PHASE

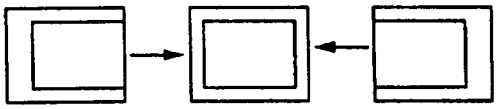
| Model Size | H |
|---|---|
| 21″ | 5.6μs |
| 25″ | 5.1μs |
| 29″ | 5.5μs |

## 4-4. J1 BOARD ADJUSTMENTS

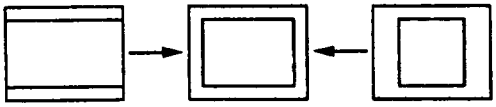



J1 BOARD (COMPONENT SIDE)

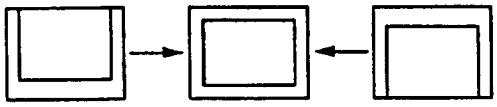
RV1508
H. CENT (HORIZONTAL CENTER)



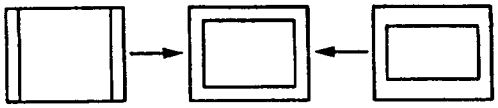
RV1504
H. SIZE (HORIZONTAL SIZE)



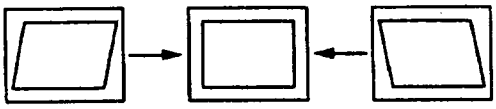
RV1506
V. CENT (VERTICAL CENTER)



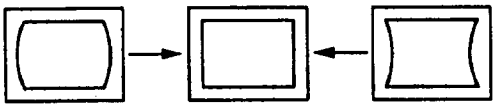
RV1507
V. SIZE (VERTICAL SIZE)



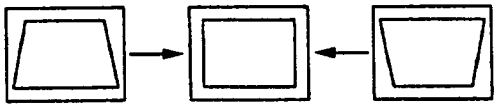
RV1509
V. ANGLE (VERTICAL ANGLE)



RV1503
PIN AMP (PINCUSHION AMPLIFIER)

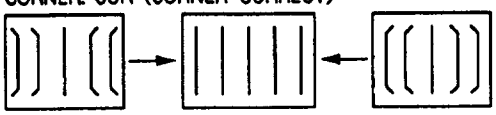


RV1502
PIN PHASE (PINCUSHION PHASE)



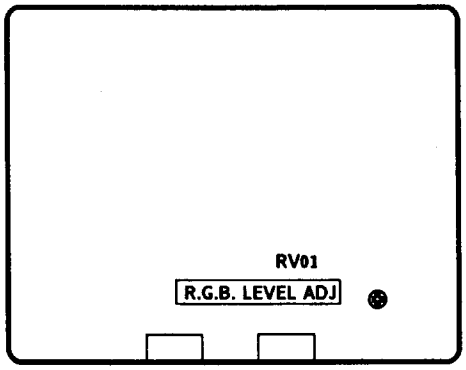
RV1501
PIN. COR (PINCUSHION CORRECT)

RV1505
CORNER COR (CORNER CORRECT)



## 4-5. V BOARD ADJUSTMENT

(KV-C2161B ONLY)




V BOARD (COMPONENT SIDE)

### RGB LEVEL ADJUSTMENT (RV01)

1. Maximize the picture setting.
2. Adjust RV01 so that the RGB output is 0.75V.

## 4-6. SECONDARY ADJUSTMENTS

### SUB BRIGHTNESS ADJUSTMENT

1. Set the system to receive a test pattern.
2. Press → • ← on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and — simultaneusly, turn on the power. (SUB mode is obtained)
5. Minimize the ◑ contrast setting.
6. Adjust the ☼ brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the ◇ (store) button of the remote commander.
   (SUB mode is released)

   If there is no test color pattern

1. Set the system to receive a color pattern.
2. Press → • ← on the remote commander to put the system into normal mode.
   Set the ◕ color to its normal state.

3-5. Steps are the same as above.

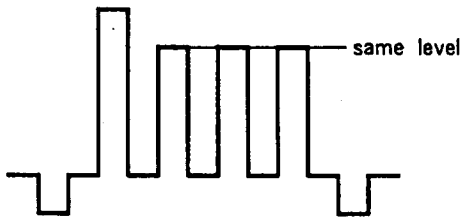
6. Since 20 IRE is nearly blue, adjust the ☼ brightness control so that the blue barely glows.

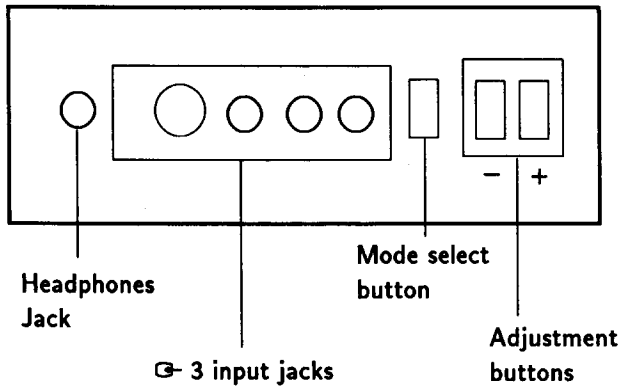
7. Same as step 7 above.

8. Press → • ← on the remote commander to put the system into normal mode.

### SUB COLOR ADJUSTMENT

1. Set the system to receive color bars.
2. Press → • ← on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and — simultaneusly, turn on the power. (SUB mode is obtained).
5. Adjust the color control so that the B out waveform (pin ⑤ of C board connector CNC72) is as shown in the figure below.
6. Depress the ◇ (store) button of the remote commander. (SUB mode is released)

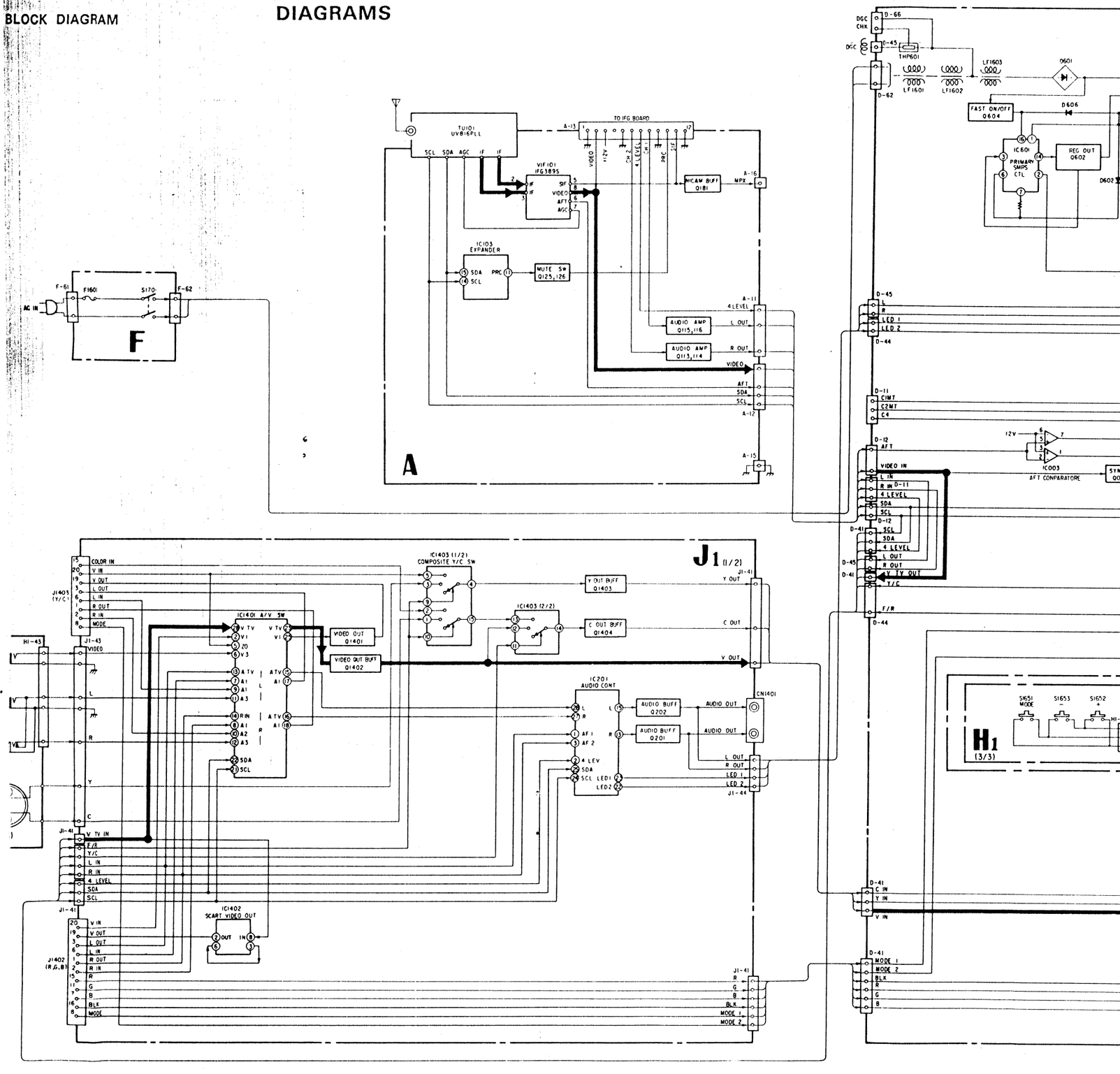


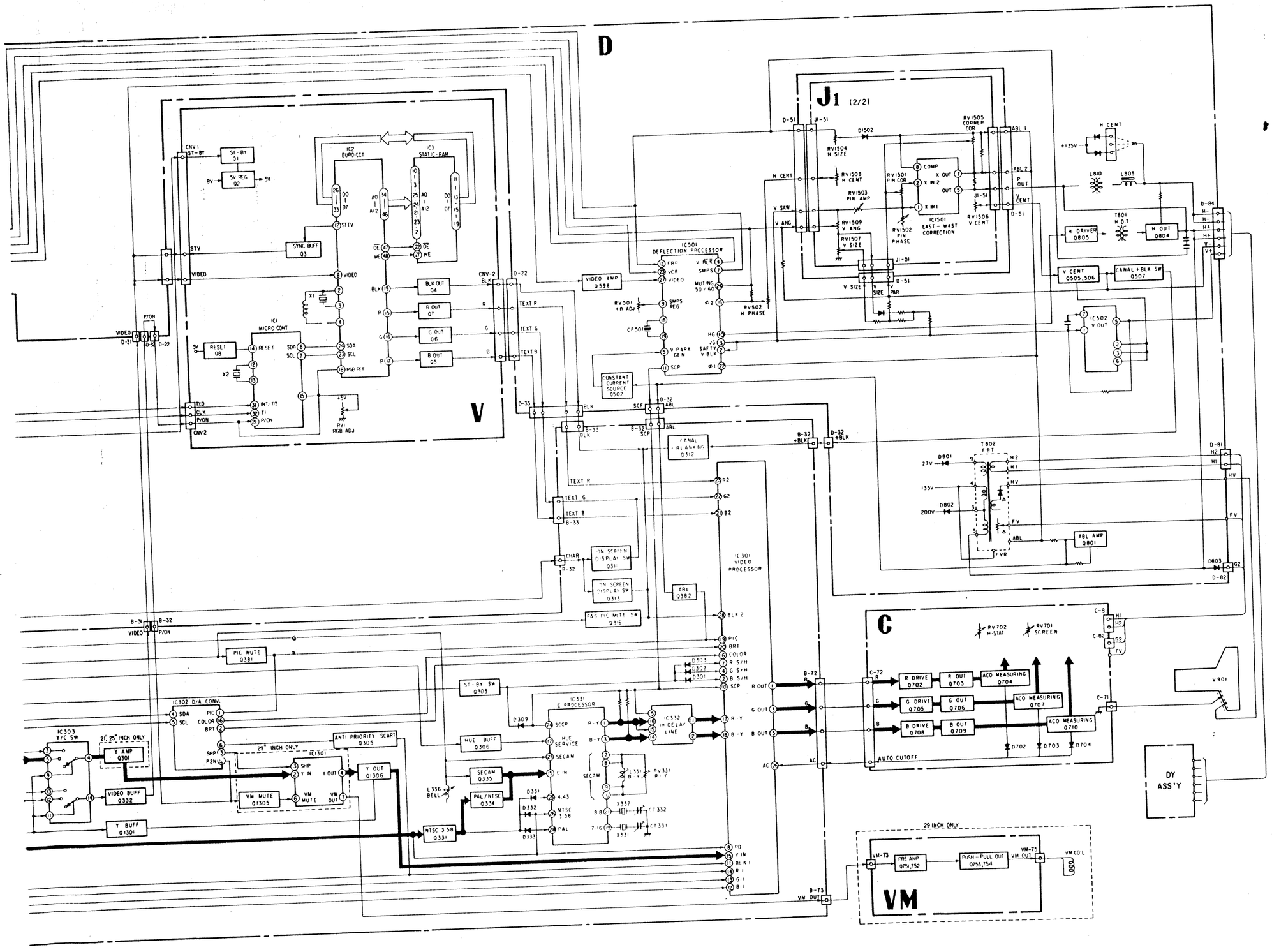



MEMO

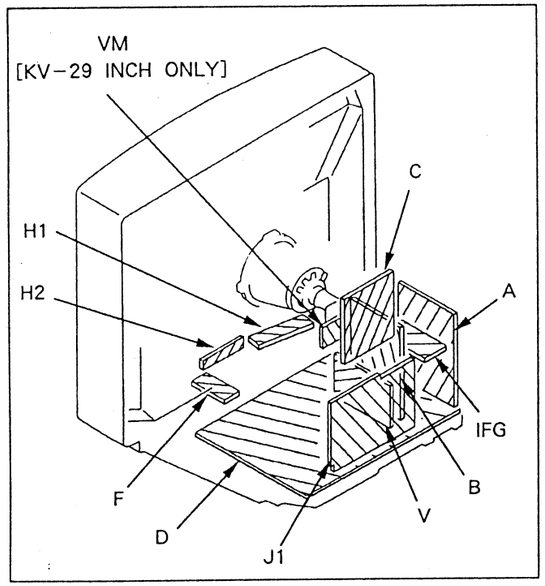
# SECTION 5
# DIAGRAMS

## BLOCK DIAGRAM




D
J1 (2/2)
V
C
VM
CNV 1
ST-BY
ST-BY Q1
5V REG Q2
IC2 EURO CC1
IC3 STATIC RAM
SYNC BUFF Q3
STV
VIDEO
IC1 MICRO CONT
RESET Q8
X1
X2
RGB ADJ
BLK OUT Q4
R OUT Q7
G OUT Q6
B OUT Q5
CNV2
P/ON
D-31
D-32
D-22
CNV-2
D-33
B-33
B-32
TEXT R
TEXT G
TEXT B
VIDEO AMP Q598
IC501 DEFLECTION PROCESSOR
RV501 +B ADJ
CF501
RV502 H PHASE
CONSTANT CURRENT SOURCE Q502
SCP
ABL
CHAR
ON SCREEN DISPLAY SW Q311
ON SCREEN DISPLAY SW Q313
FAIL PIC MUTE SW Q316
ABL Q382
IC301 VIDEO PROCESSOR
PIC MUTE Q381
IC302 D/A CONV.
ST-BY SW Q303
IC303 Y/C SW
20" 25" INCH ONLY
Y AMP Q301
VIDEO BUFF Q332
Y BUFF Q1301
29" INCH ONLY
IC1301
VM MUTE Q1305
ANTI PRIORITY SCART Q305
Y OUT Q1306
HUE BUFF Q306
IC331 C PROCESSOR
IC332 1H DELAY LINE
SECAM Q335
PAL/NTSC Q334
NTSC 3.58 Q331
D309
D331
D332
D333
L336 BELL
L331 R-Y
RV331 R-Y
X332
X331
CT332
CT331
SECAM
R-Y
B-Y
RV1504 H SIZE
RV1508 H CENT
RV1503 PIN AMP
RV1509 V ANG
RV1507 V SIZE
RV1501 PIN COR
RV1502 PIN PHASE
RV1503 CORNER COR
IC1501 EAST-WAST CORRECTION
RV1506 V CENT
V SIZE
V SIZE PAR
D1502
H CENT
V SAW
V ANG
ABL 1
ABL 2
P OUT
V CENT
H DRIVER Q805
H OUT Q804
T801 H.O.T
V CENT Q505,506
CANAL+BLK SW Q507
IC502 V OUT
+135V
LB10
LB05
D-84
H-
H+
V-
V+
T802 F.B.T
D801
D802
D803
27V
135V
200V
H2
H1
HV
FV
FVR
ABL
ABL AMP Q801
D-81
D-82
G2
RV702 H-STAT
RV701 SCREEN
R DRIVE Q702
R OUT Q703
ACO MEASURING Q704
G DRIVE Q705
G OUT Q706
ACO MEASURING Q707
B DRIVE Q708
B OUT Q709
ACO MEASURING Q710
AUTO CUTOFF
D702
D703
D704
C-72
C-71
C-81
C-82
B-72
B-73
R OUT
G OUT
B OUT
AC
V901
DY ASS'Y
29 INCH ONLY
VM-73
PRE AMP Q751,752
PUSH-PULL OUT Q753,754
VM-75
VM OUT
VM COIL

## 5-2. CIRCUIT BOARDS LOCATION




## 5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μF unless otherwise noted.
  pF : μμF 50WV or less are not indicated except for electrolytic.
- Indication of resistance, which dose not have one for rating electrical power, is as follows.

| |
|---|
| Pitch : 5mm<br>Rating electrical power : ¼W |

- Chip resistor is in 1/10W.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000KΩ
- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- : panel designation or adjustment for repair.
- All variable and adjustable resistors have charactristic curve B, unless otherwise noted.
- All voltages are in V.
- Readings are taken with a 10MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal produc-tion tolerances.
- : B + bus.
- : signal path.(RF)

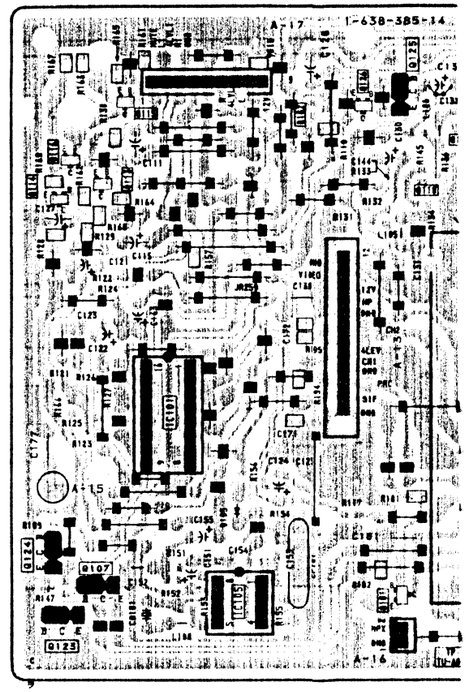
Reference information

| | | |
|---|---|---|
| RESISTOR | RN | : METAL FILM |
| | RC | : SOLID |
| | FPRD | : NONFLAMMABLE CARBON |
| | FUSE | : NONFLAMMABLE FUSIBLE |
| | RS | : NONFLAMMABLE METAL OXIDE |
| | RB | : NONFLAMMABLE CEMENT |
| | RW | : NONFLAMMABLE WIREWOUND |
| | ※ | : ADJUSTMENT RESISTOR |
| COIL | LF-8L | : MICRO INDUCTOR |
| CAPACITOR | TA | : TANTALUM |
| | PS | : STYROL |
| | PP | : POLYPROPYLENE |
| | PT | : MYLAR |
| | MPS | : METALIZED POLYESTER |
| | MPP | : METALIZED POLYPROPYLENE |
| | ALB | : BIPOLAR |
| | ALT | : HIGH TEMPERATURE |
| | ALR | : HIGH RIPPLE |

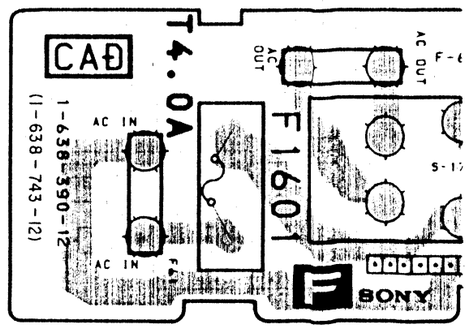
**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**A** [TUNER, SIF, VIF] **F** [AC IN, POWER SW

**—A Board—**

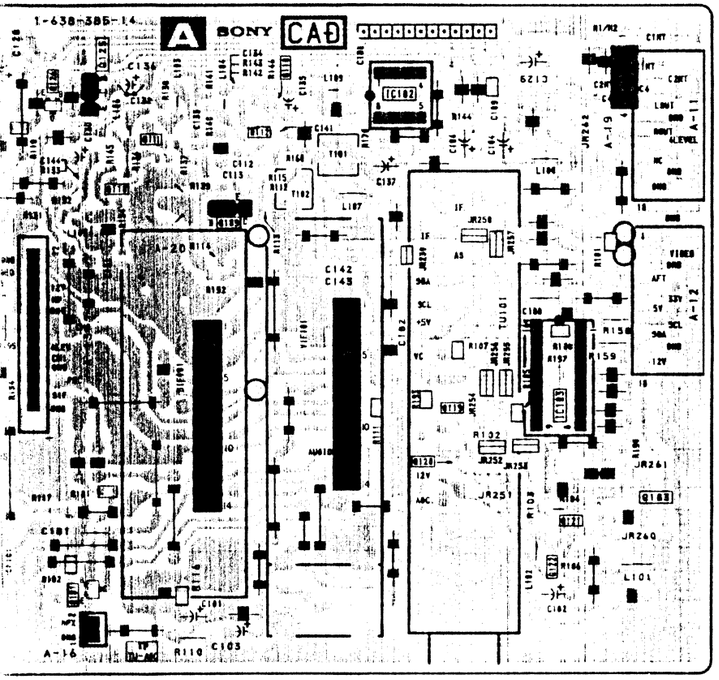


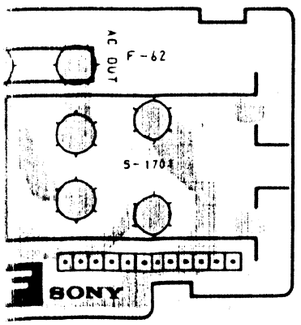

**—F Board—**

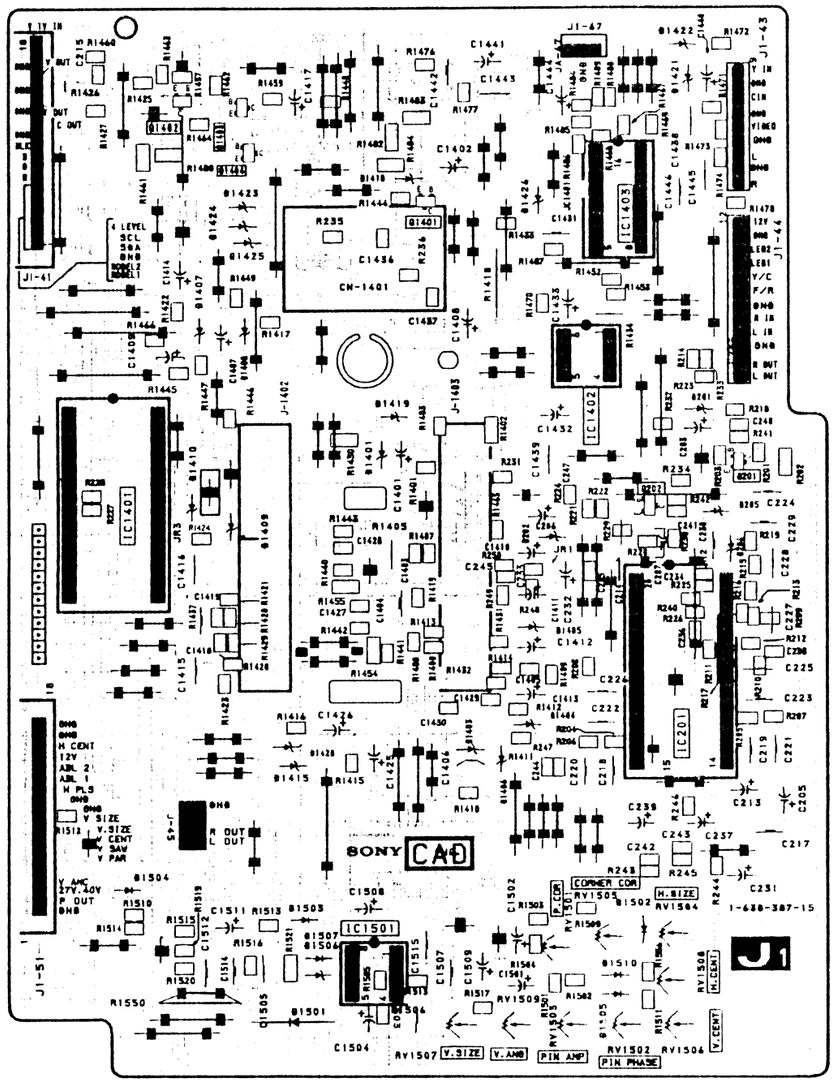


[AC IN, POWER SW] **J1** [AUDIO CONTROL, AV INPUT, Y/C INPUT, SCART VIDEO OUT, EAST-WEST CORRECTION] **H1** [CONTROL SW, AV INPUT HEADPHONE] **H2** [SIRCS, RECEIVER, INDICATOR] **VM** [VM AMP]

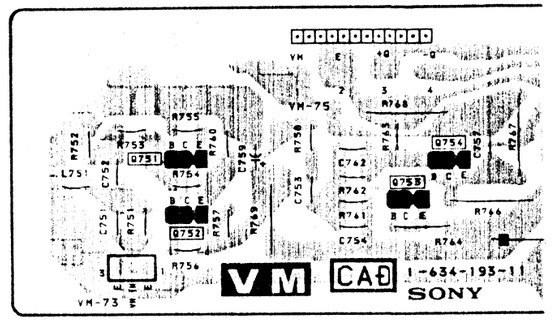
—J1 Board—



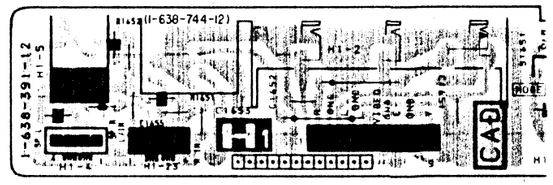



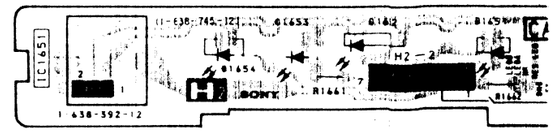

—VM Board— (29 INCH ONLY)



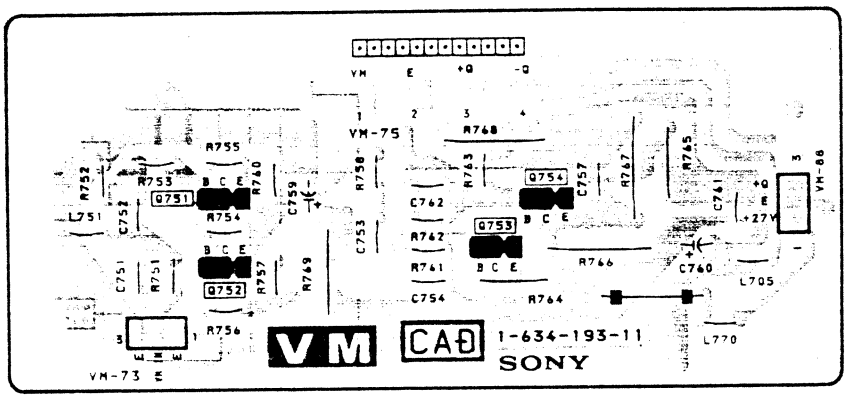

—H1 Board—



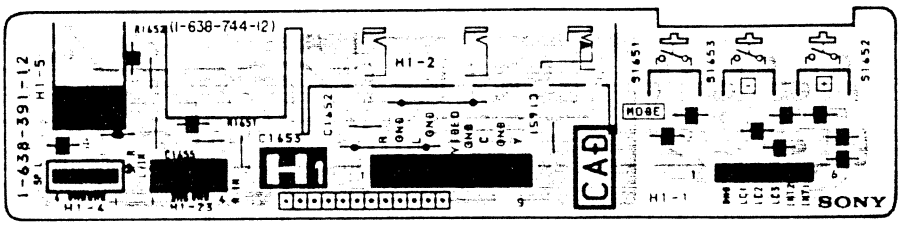

—H2 Board—



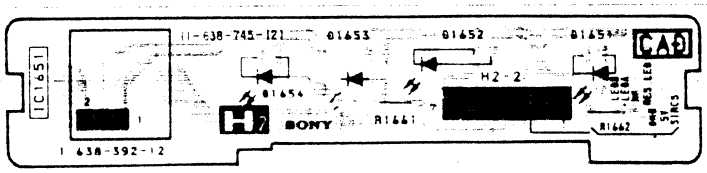
-VM Board- (29 INCH ONLY)

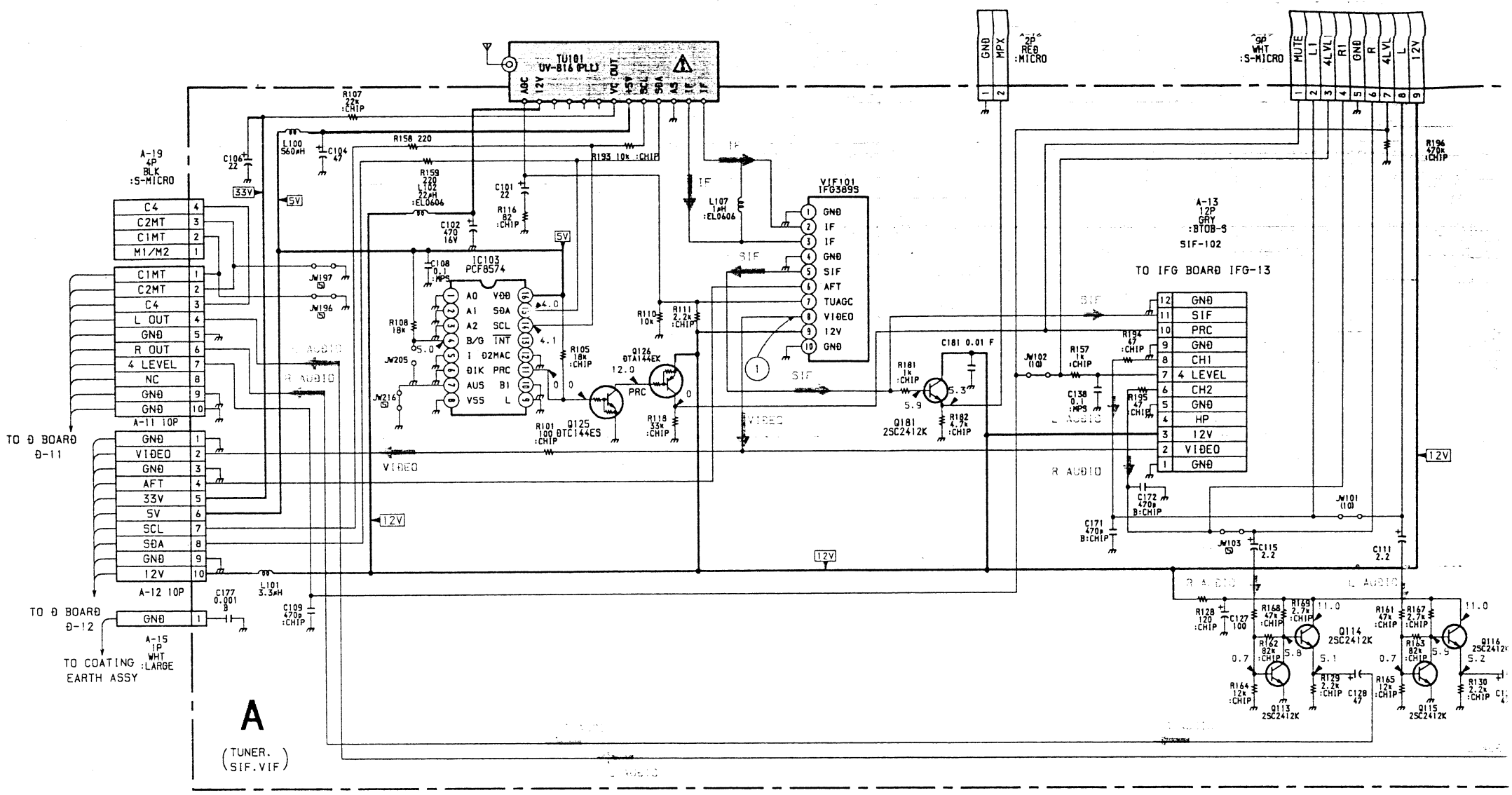



-H1 Board-



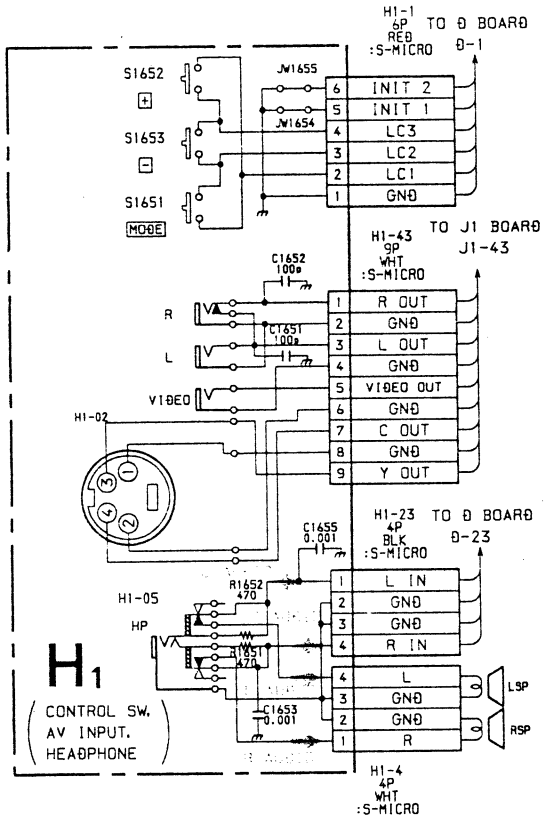

-H2 Board-





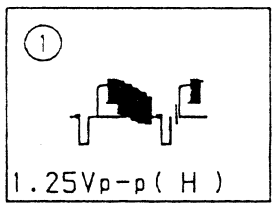

**A**
(TUNER. SIF.VIF)

B-SS4114<AEP>




B-SS4114<AEP>-H1.

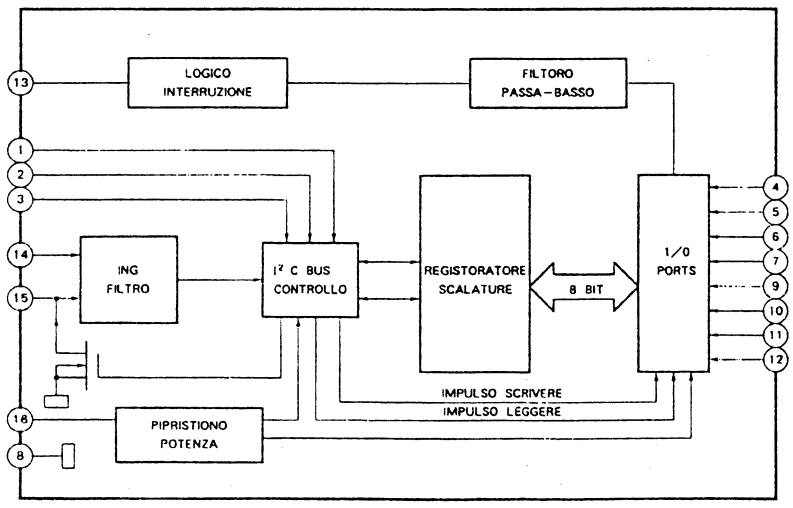
## • WAVEFORMS A BOARD

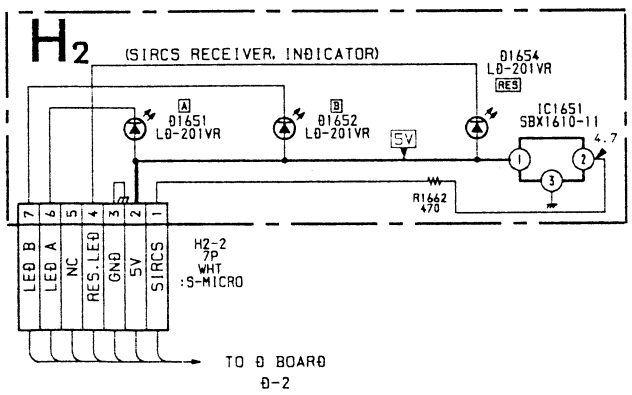



## • A BOARD

| IC103 | PCF8574 | EXPANDER |
|---|---|---|
| | | |
| Q113 | 2SC2412K | AUDIO AMP |
| Q114 | 2SC2412K | AUDIO AMP |
| Q115 | 2SC2412K | AUDIO AMP |
| Q116 | 2SC2412K | AUDIO AMP |
| Q125 | DTC144ES | MUTE SW |
| Q126 | DTA144EK | MUTE SW |
| Q181 | 2SC2412K | NICAM BUFFER |

## A BOARD IC103 PCF8574

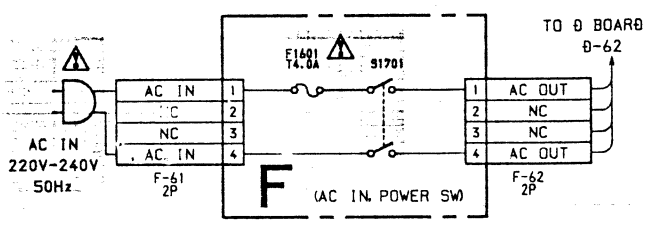



B-SS4114<AEP>-H2.

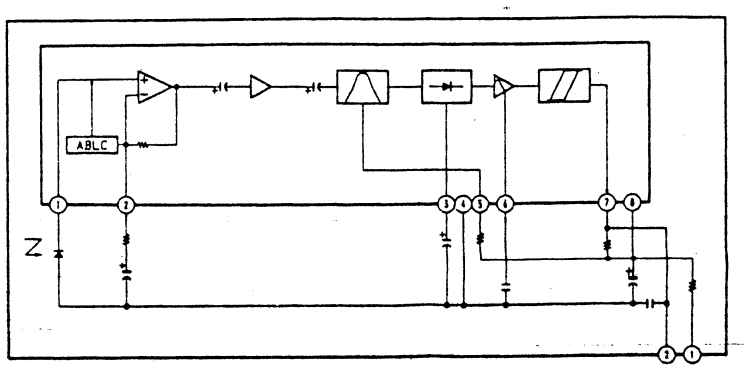
## • H2 BOARD

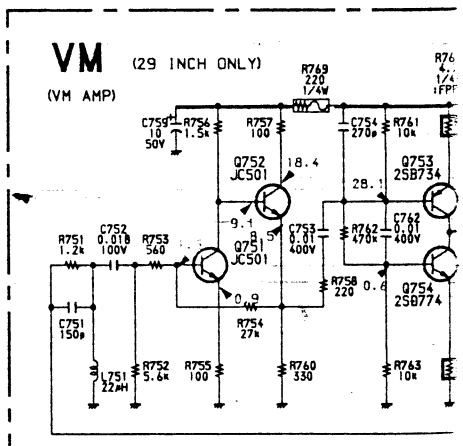
| IC1651 | SBX1610-11 | INFRARED RECIEVER |
|---|---|---|
| | | |
| D1651 | LD-201VR | AUDIO CHANNEL A INDICATOR |
| D1652 | LD-201VR | AUDIO CHANNEL B INDICATOR |
| D1654 | LD-201VR | RESET |




B-SS4114<AEP>-F..

## H2 BOARD IC1651 SBX1610-11



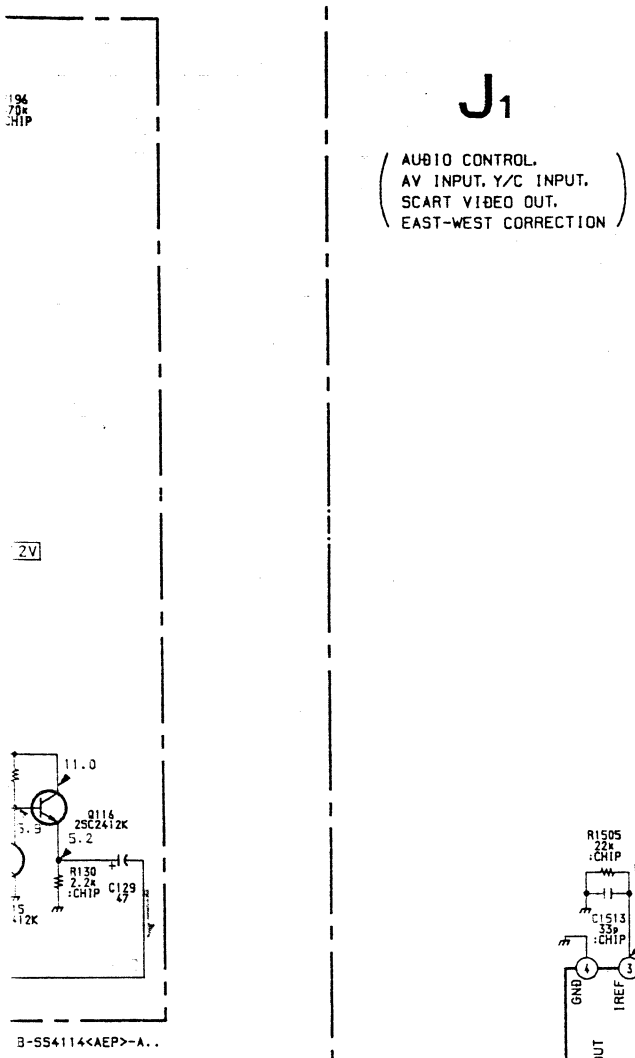




## • VM BOARD (29 INCH ONLY)

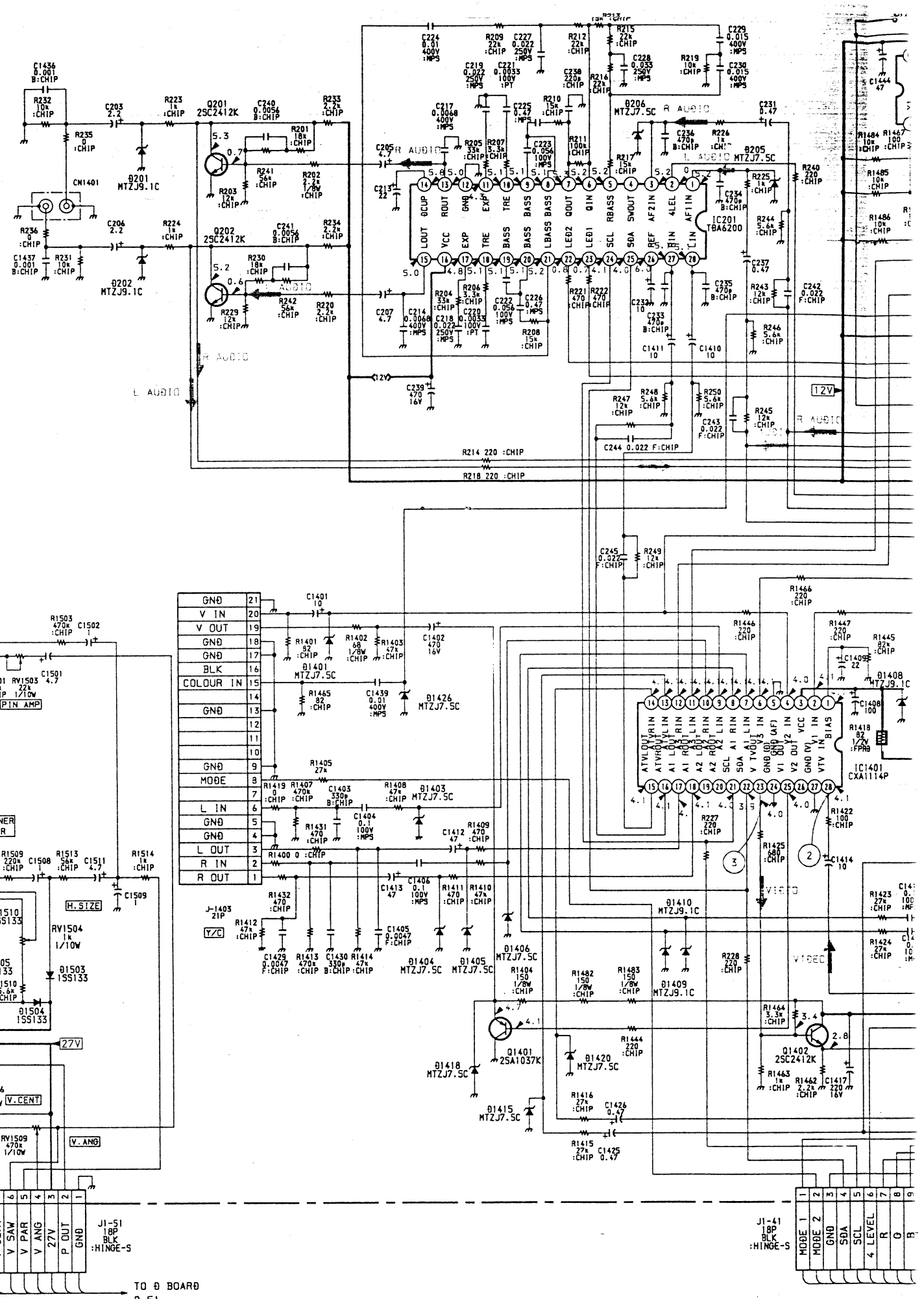
| Q751 | JC501 | REF-AMP |
|---|---|---|
| Q752 | JC501 | REF-AMP |
| Q753 | 2SB734 | PUSH-PULL OUT |
| Q754 | 2SD774 | PUSH-PULL OUT |

# J1

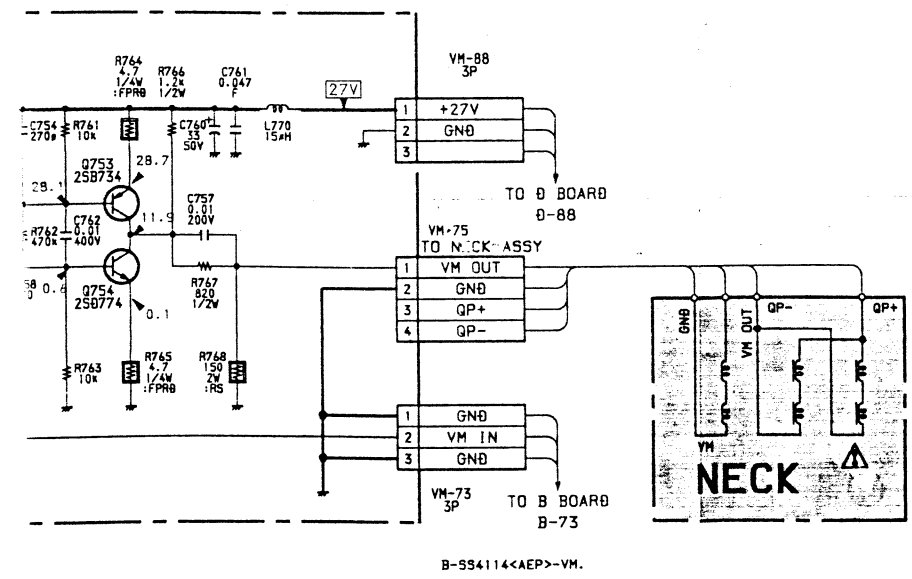
( AUDIO CONTROL.
AV INPUT, Y/C INPUT.
SCART VIDEO OUT.
EAST-WEST CORRECTION )






Ø-51



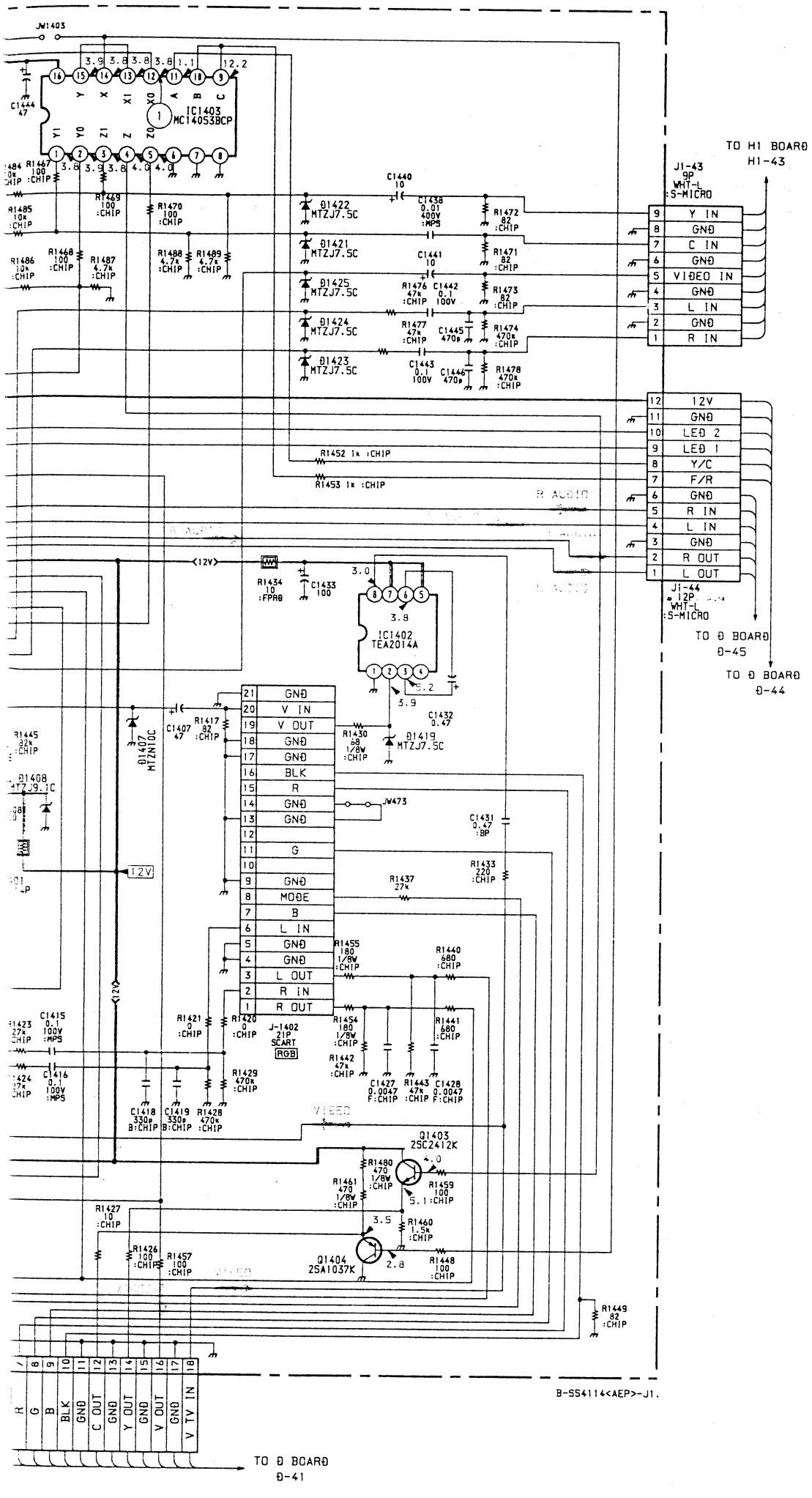

J1 BOARD * MARK

| | 21″ | 25″ | 29″ |
|---|---|---|---|
| C1512 | 0.0068 400V | 0.0068 400V | - |
| C1514 | 0.0022 250V | 0.0068 250V | - |
| C1515 | 820P | 820P | - |
| | | | |
| R1515 | 680K | 680K | - |
| R1520 | 470K | 470K | 390K |
| R1550 | JW | JW | 1 1W F |

- : NOT MOUNTED

-Y)

| |
|---|
| 1P |
| 1P |
| ULL OUT |
| ULL OUT |




| | |
|---|---|
| 9 | Y IN |
| 8 | GND |
| 7 | C IN |
| 6 | GND |
| 5 | VIDEO IN |
| 4 | GND |
| 3 | L IN |
| 2 | GND |
| 1 | R IN |

| | |
|---|---|
| 12 | 12V |
| 11 | GND |
| 10 | LED 2 |
| 9 | LED 1 |
| 8 | Y/C |
| 7 | F/R |
| 6 | GND |
| 5 | R IN |
| 4 | L IN |
| 3 | GND |
| 2 | R OUT |
| 1 | L OUT |

| | |
|---|---|
| 21 | GND |
| 20 | V IN |
| 19 | V OUT |
| 18 | GND |
| 17 | GND |
| 16 | BLK |
| 15 | R |
| 14 | GND |
| 13 | GND |
| 12 | |
| 11 | G |
| 10 | |
| 9 | GND |
| 8 | MODE |
| 7 | B |
| 6 | L IN |
| 5 | GND |
| 4 | GND |
| 3 | L OUT |
| 2 | R IN |
| 1 | R OUT |

| | |
|---|---|
| R | 8 |
| G | 9 |
| B | 10 |
| BLK | 11 |
| GND | 12 |
| C OUT | 13 |
| GND | 14 |
| Y OUT | 15 |
| GND | 16 |
| V OUT | 17 |
| GND | 18 |
| V TV IN | |

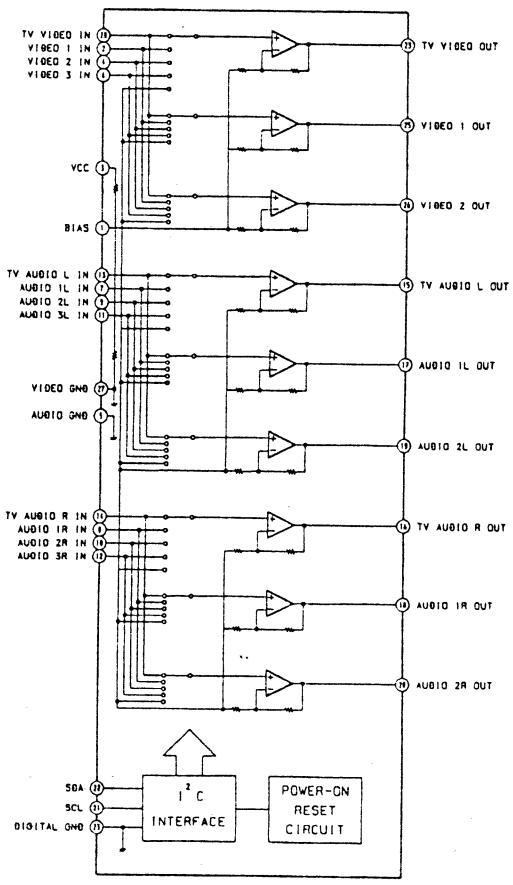
## · J1 BOARD

| | | |
|---|---|---|
| IC201 | TDA6200 | AUDIO CONTROL |
| IC1401 | CXA1114P | AV SW |
| IC1402 | TEA2014A | SCART VIDEO OUT |
| IC1403 | MC14053BCP | COMPOSITE Y/C SW |
| IC1501 | TEA2031A | EAST-WEST CORRECTION |
| | | |
| Q201 | 2SC24'2K | AUDIO R BUFF |
| Q202 | 2SC2412K | AUDIO L BUFF |
| Q1401 | 2SA1037K | VIDEO OUT |
| Q1402 | 2SC2412K | VIDEO OUT BUFF |
| Q1403 | 2SC2412K | Y OUT BUFF |
| Q1404 | 2SA1037K | C OUT BUFF |
| | | |
| D201 | MTZJ9.1C | PROTECT |
| D202 | MTZJ9.1C | PROTECT |
| D205 | MTZJ7.5C | PROTECT |
| D206 | MTZJ7.5C | PROTECT |
| D1401 | MTZJ7.5C | PROTECT |
| D1403 | MTZJ7.5C | PROTECT |
| D1404 | MTZJ7.5C | PROTECT |
| D1405 | MTZJ7.5C | PROTECT |
| D1406 | MTZJ7.5C | PROTECT |
| D1407 | MTZN10C | PROTECT |
| D1408 | MTZJ9.1C | REG |
| D1409 | MTZJ9.1C | PROTECT |
| D1410 | MTZJ9.1C | PROTECT |
| D1415 | MTZJ7.5C | PROTECT |
| D1418 | MTZJ7.5C | PROTECT |
| D1419 | MTZJ7.5C | PROTECT |
| D1420 | MTZJ7.5C | PROTECT |
| D1421 | MTZJ7.5C | PROTECT |
| D1422 | MTZJ7.5C | PROTECT |
| D1423 | MTZJ7.5C | PROTECT |
| D1424 | MTZJ7.5C | PROTECT |
| D1425 | MTZJ7.5C | PROTECT |
| D1426 | MTZJ7.5C | PROTECT |
| D1501 | RGP10G | PROTECT |
| D1502 | 1SS133 | DECOUPLING H SIZE |
| D1503 | 1SS133 | CLIPPING V PARABORA |
| D1504 | 1SS133 | CLIPPING H PULSE |
| D1505 | 1SS133 | REG |
| D1506 | MTZJ36D | PROTECT |
| D1507 | 1SS133 | PROTECT |
| D1510 | 1SS133 | REG |

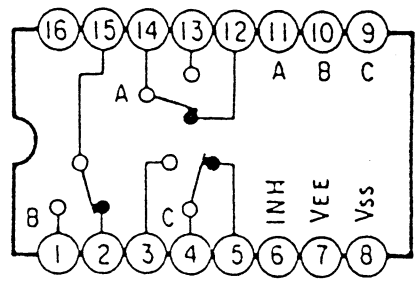
## · WAVEFORMS J1 BOARD

| ① | ② | ③ |
|---|---|---|
| 1.25Vp-p ( H ) | 1.25Vp-p ( H ) | 2.0Vp-p ( H ) |

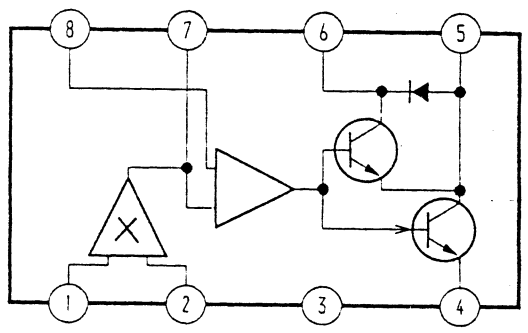
## J1 BOARD IC1401 CXA1114P



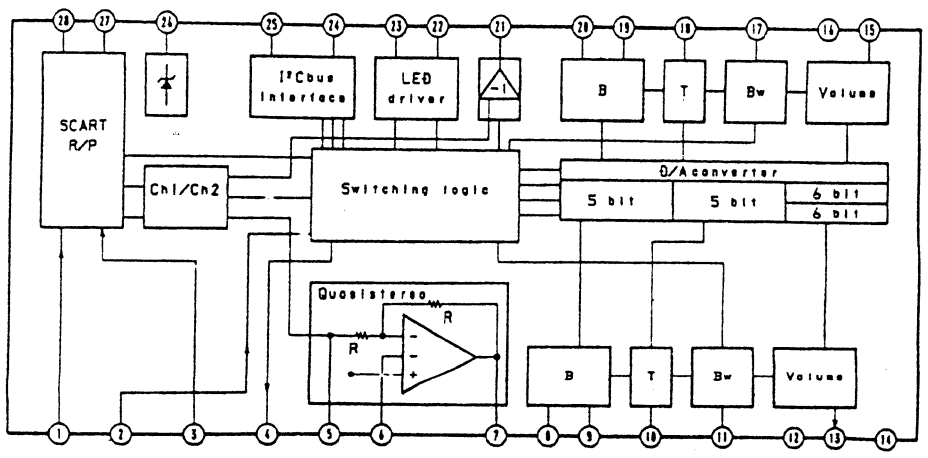

## J1 BOARD IC1403 MC14053BCP



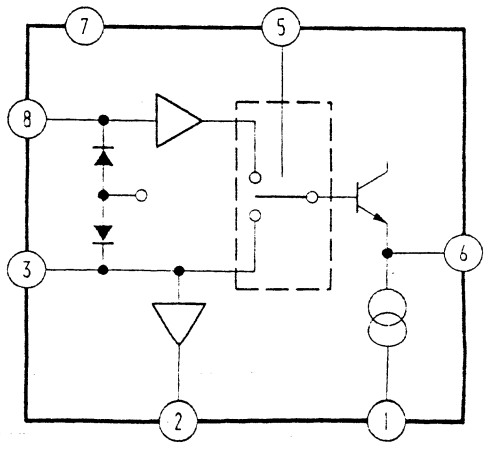

## J1 BOARD IC1501 TEA2031A



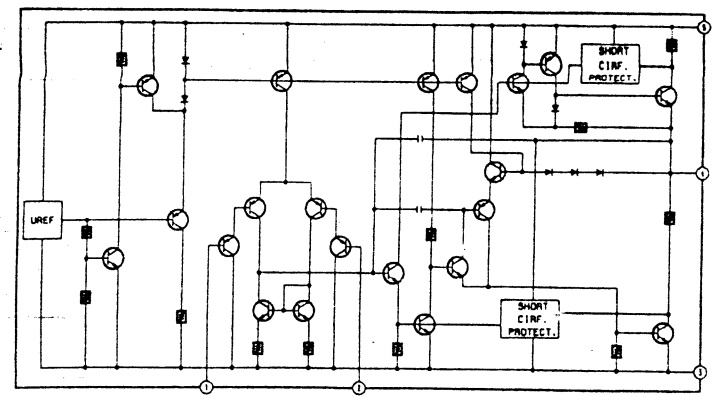
## J1 BOARD IC201 TDA6200



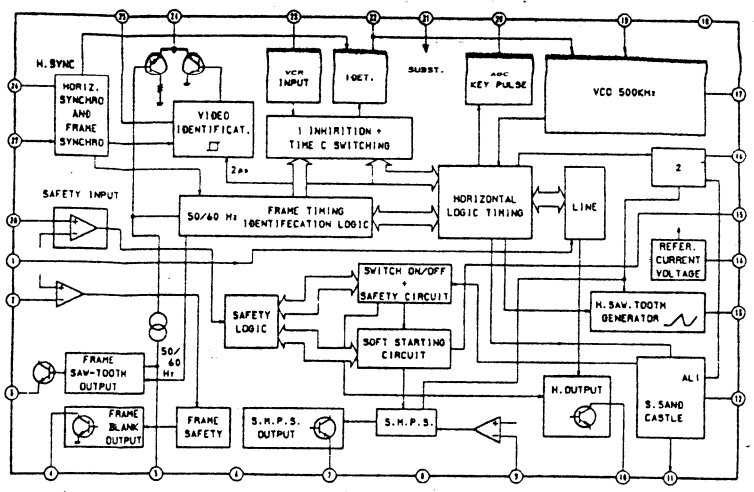

## J1 BOARD IC1402 TEA2014A



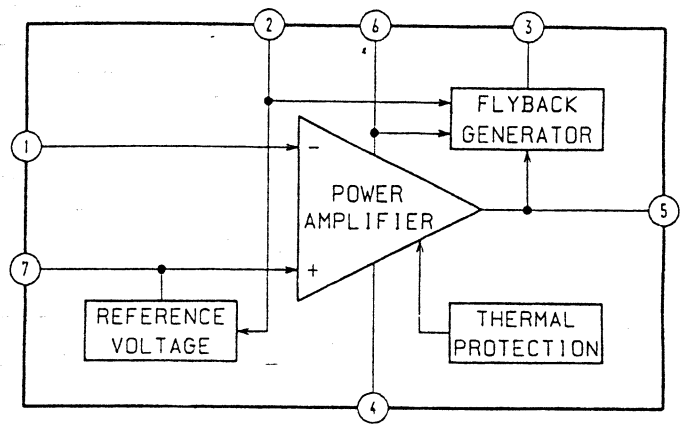
## D BOARD IC251/261 TDA2050



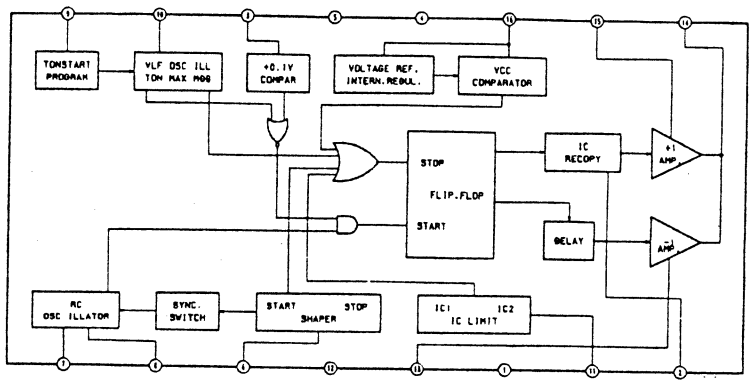

## D BOARD IC501 TEA2028B




## D BOARD IC502 TDA8170




## D BOARD IC601 TEA2260




## • WAVEFORMS D BOARD

| | | |
|---|---|---|
| ① 1.0 Vp-p( H ) | ② 2.5 Vp-p( V ) | ③ 4.8 Vp-p( V ) |
| ④ 3.0 Vp-p( V ) | ⑤ 4.5 Vp-p( H ) | ⑥ 9.0 Vp-p( H ) |
| ⑦ 12.0Vp-p( H ) | ⑧ 3.4 Vp-p( H ) | ⑨ 0.1 Vp-p(503KHz) |
| ⑩ 1.1 Vp-p( H ) | ⑪ 0.7Vp-p( V ) | ⑫ 3.0 Vp-p( V ) |
| ⑬ 29.0Vp-p( V ) | ⑭ 28.0Vp-p( V ) | ⑮ 3.4 Vp-p( H ) |
| ⑯ 230 Vp-p( H ) | ⑰ 16.0Vp-p( H ) | ⑱ 900 Vp-p( H ) |
| ⑲ 260Vp-p ( H ) | ⑳ 8.0Vp-p ( V ) | ㉑ 48.0Vp-p ( V ) |
| ㉒ 1.4Vp-p ( H ) | ㉓ 4.0 Vp-p(12MHz) | |

## D BOARD * MARK

| | 21″ | 25″ | 29″ | | 21″ | 25″ | 29″ |
|---|---|---|---|---|---|---|---|
| C519 | 0.47 | 0.47 | 0.33 | L806 | DCC-H | DRAM CORE (CDI) | HCC DUST CORE 3.9mH |
| C526 | 27P | 27P | 22P | | | | |
| C536 | 4.7 16V | 10 16V | 10 16V | L810 | WITH CORE | PMC | PMT |
| C617 | 220 25V | 100 50V | 100 50V | | | | |
| C620 | 1 63V | 0.47 50V | 0.47 50V | R077 | 1K | – | 1K |
| C811 | 1 200V | 2 200V | 2 200V | R525 | 1K | 1K | – |
| C815 | 1 200V | 1 200V | 0.82 200V | R531 | – | 120K | 120K |
| C817 | 0.0106 1.4KV | 0.015 1.4KV | 0.017 1.4KV | R532 | – | 1K | 1K |
| C821 | 680P 2KV | 680P 2KV | 470P 2KV | R533 | 180 | 0 | 0 |
| | | | | R535 | 4.7M | 2.2M | 2.2M |
| D-88 | – | – | 3P | R545 | 39K | 22K | 22K |
| | | | | R547 | 5.6K | 3.3K | 3.3K |
| D506 | DA204K | DA204K | – | R548 | 1.2 1W F | 1 1W F | 1 1W F |
| D509 | – | 1SS133 | 1SS133 | R549 | 470 2W F | 390 2W F | 390 2W F |
| D514 | 5mm JW | 5mm JW | 1SS133 | R552 | 1.2K 1W | – | – |
| D515 | – | – | 1SS133 | R561 | – | – | 270K |
| D807 | – | ERC26-15S | ERC06-15S | R570 | – | – | 680 |
| D808 | ERD28-08S | ERD29-08J | ERD29-08J | R600 | – | 1 | 1 |
| | | | | R603 | 15 3W F | 12 3W F | 12 3W F |
| JW202 | – | – | 5mm | R607 | 4.7K | 4.7K | 5.6K |
| JW203 | 5mm | 5mm | – | R631 | 27K 2W | 27K 2W | – |
| JW204 | 5mm | 5mm | – | R643 | 0.15 2W F | 0.12 2W F | 0.12 2W F |
| JW205 | – | – | 5mm | R811 | 100 1W | 22 2W F | 22 2W F |
| JW206 | 5mm | 5mm | – | R812 | 75K 1/2W | 68K 1/2W | 51K 1/2W |
| JW207 | 5mm | 5mm | – | R825 | 1 1W F | 0.47 1W F | 0.47 1W F |
| JW216 | 15mm | 15mm | – | R5503 | 4.7 | 4.7 | 10 |
| JW229 | 10mm | 10mm | – | R5506 | – | – | 12K |
| | | | | | | | |
| L801 | – | – | 3.9mH | | | | |

– : NOT MOUNTED

## • D BOARD

| | | |
|---|---|---|
| IC001 | SDA2560-A012 | TUNI |
| IC002 | MC14051BCP | ON S |
| IC003 | BA4558 | AFT ( |
| IC005 | SDA2546 | MY M |
| IC251 | TDA2050 | AUDIC |
| IC261 | TDA2050 | AUDIC |
| IC501 | TEA2028B | DEFLE |
| IC502 | TDA8170 | V OU |
| IC601 | TEA2260 | PRIMA |
| IC604 | TEA7605 | + 5V |
| IC608 | MC7812CT | + 12V |
| | | |
| Q001 | DTC144EK | 50/6 |
| Q002 | DTC144EK | BLK S |
| Q003 | 2SA1037K | SYNC |
| Q004 | 2SA1037K | SYNC |
| Q005 | DTC144EK | Y/C S |
| Q006 | DTC144EK | FRONT |
| Q007 | 2SC2412K | MODE |
| Q008 | 2SC2412K | MODE |
| Q009 | 2SC2412K | MUTE |
| Q010 | 2SC2412K | RESET |
| Q251 | 2SC2412K | AUDIO |
| Q261 | 2SC2412K | AUDO |
| Q271 | 2SC2412K | VOLTA |
| Q502 | 2SA1037K | CONST |
| Q505 | 2SD774-4 | V CEN |
| Q506 | 2SB734-3 | V CEN |
| Q507 | 2SA1037K | CANAL |
| Q598 | 2SA1037K | VIDEO |
| Q601 | 2SB1357T114EF | STBY S |
| Q602 | 2SD1548 | REG O |
| Q603 | 2SB1357T114EF | STBY S |
| Q604 | 2SA1037K | FAST C |
| Q605 | 2SC2412K | STBY S |
| Q606 | 2SC2412K | STBY S |
| Q607 | 2SD2096 | + 12V |
| Q608 | 2SC2412K | STBY S |
| Q609 | 2SD789-3 | STBY S |
| Q801 | 2SC2412K | ABL AM |
| Q804 | 2SD1941-06 | H OUT |
| Q805 | 2SC2688-L | H DRIV |
| | | |
| D001 | MTZJ6.8C | PROTEC |
| D002 | MTZJ6.8C | PROTEC |
| D003 | 1SS133 | HUE CT |
| D005 | MTZJ5.6B | PROT |
| D006 | MTZJ33A | VC VOL |
| D007 | MTZJ3.9B | PLOT F |
| D009 | MTZJ5.6B | CLIPPIN |
| D010 | MTZJ6.2B | PROT |
| D011 | MTZJ6.2B | PROT |
| D012 | 1SS133 | PROT |
| D013 | MTZJ6.8C | PROT |
| D271 | MTZJ13B | VOLTAG |
| D272 | 1SS133 | DECOUP |
| D501 | 1SS133 | START |
| D504 | GP08D | V PULS |
| D506 | DA204K | CURREN |
| D508 | 1SS133 | CANAL |
| D509 | 1SS133 | V LIN (2 |
| D511 | GP08D | PROT |
| D512 | GP08D | PROT |
| D513 | MTZJ4.7B | PROT |
| D514 | 1SS133 | PROT (2 |
| D515 | 1SS133 | PROT (2 |
| D601 | D4SB60L-F | AC REC |
| D602 | RGP10G | REF REC |
| D603 | GP08D | SMPS D |
| D604 | GP08D | SMPS D |
| D605 | GP08D | SMPS D |
| D606 | RGP10G | + 12V R |
| D607 | RGP10G | REF REC |
| D608 | ERC25-06S | PLUSE C |
| D609 | MTZJ33A | FAST ON |
| D610 | CTU-12S | + 14V R |
| D611 | ERD29-08J | + 135V |
| D612 | CTU-12S | + 7V RE |
| D613 | RGP15J | AF V RE |
| D614 | RGP15J | AF V RE |
| D616 | MTZJ6.2B | + 12V R |
| D617 | 1SS133 | PROT |
| D618 | MTZJ5.6B | + 12V R |
| D619 | MTZJ33A | FAST ON |
| D620 | DA204K | + 12V R |
| D621 | MTZJ33A | FAST ON |
| D622 | 1SS133 | PROT |
| D623 | 1SS133 | DECOUPL |
| D624 | 1SS133 | DECOUPL |
| D630 | MTZJ15A | + 12V RE |
| D801 | RGP10G | + 27V RE |
| D802 | RGP10G | + 200V F |
| D803 | RGP02-17 | G2 RECT |
| D804 | GP08D | H CENTE |
| D805 | GP08D | H CENTE |
| D806 | ERC06-15S | H DAMPE |
| D807 | ERC06-15S | H DAMPE |
| D808 | ERD28-08S | PIN DAM |
| D808 | ERD29-08J | PIN DAM |

- JING CTL
- SCREEN DISPLAY
- COMPARATOR
- MEMORY
- IO OUT (L)
- IO OUT (R)
- LECTION PROCESSOR
- UT
- MARY SMRS CTL
- REG
- 2V REG
- 60Hz SW
- SW
- NC SEPARATOR
- NC SEPARATOR
- C SW
- NT/REAR SW
- DE 2 SW
- DE 1 SW
- TE SW
- ET
- IO MUTE
- O MUTE
- TAGE DETECT
- ISTANT CURRENT SOURCE
- ENT
- ENT
- NAL + BLK
- EO AMP
- Y SW
- OUT
- Y SW
- T ON/OFF
- Y SW
- Y SW
- 2V REG
- Y SW
- Y SW
- AMP
- UT
- RIVER
- TECT
- TECT
- CTL
- T
- VOLTAGE REGULATION
- T RESET
- PPING SYNC LEVEL
- T
- T
- T
- T
- TAGE DETECT
- OUPLING MUTE AUDIO
- RT
- ULSE OUT
- RRENT (21/25 INCH ONLY)
- NAL + BLK LEVEL
- N (25/29 INCH ONLY)
- T
- T
- T
- T (29 INCH ONLY)
- T (29 INCH ONLY)
- RECT
- RECT
- S DRIVE 1
- S DRIVE 2
- S DRIVE 3
- V RECT
- RECT
- SE CLIPPER
- T ON/OFF
- V RECT
- 5V RECT
- RECT
- / RECT 1
- / RECT 2
- V REG
- T
- V REF
- T ON/OFF 2
- V REF
- T ON/OFF 3
- T
- OUPLING STBY
- OUPLING STBY
- V RECT
- V RECT
- 0V RECT
- RECT
- ENTER 1
- ENTER 2
- AMPER 1
- AMPER 2 (25/29 INCH ONLY)
- DAMPER (21 INCH ONLY)
- DAMPER (25/29 INCH ONLY)

TUNING CONTROL,
POWER CONTROL,
AUDIO OUT,
H/V OUT.

D

TO J1 BOARD
J1-44

TO H2 BOARD
H2-2

CN-18 2P BLK :MICRO — GND, 7V

CN-44 6P WHT — F/R, Y/C, LED 1, LED 2, GND, 1V

CN-2 7P WHT :S-MICRO — LEDB, LEDA, N, RS.LED, GND, +V, SRCS

RIBON WIRE
WITH DIP PIN

TO H1 BOARD
H1-23

CN-23 — L OUT, GND, GND, R OUT

IC251 TDA2050 L

IC261 TDA2050 R

IC001 SDA20560-A012

IC002 MC14051BCP

IC003 BA4558

IC005 SDA2546

CN-31 10P GRY :BTOB-P
10 V IN
9 V BLANK
8 Y OUT
7 7V
6 V OUT
5 YC-SWITCH
4 C OUT
3 GND
2 SDA
1 SCL
TO B BOARD B-31

CN-21 10P GRY :BTOB-P
10 GND
9 14V
8 GND
7 GND
6 7V
5 ST.BY
4 GND
3 VIDEO
2 S-TV
1 GND
TO V BOARD CNV-1

CN-32 10P GRY :BTOB-P
10 HUE
9 ST.BY
8 MUTE
7 CHAR
6 P/ON
5 GND
4 +12V
3 SCP
2 +BLK
1 ABL
TO B BOARD B-32

CN-22 10P GRY :BTOB-P
10 PON
9
8 GND
7 TDAT
6 TCLK
5 GND
4 R IN
3 G IN
2 B IN
1 BLK
TO V BOARD CNV-2

CN-33 10P GRY :BTOB-P
1 BLK1
2 B OUT
3 G OUT
4 R OUT
5 GND
6 BLK
7 TEXT B
8 TEXT G
9 TEXT R
10 GND
TO B BOARD B-33

CN-11 10P
1 C1MT
2 C2MT
3 C4
4 L IN
5 GND
6 R IN
7 4-LEVEL
8 NC
9 GND
10 GND
TO A BOARD A-11

CN-12 10P
1 GND
2 VIDEO IN
3 GND
4 AFT
5 33V
6 5V
7 SCL
8 SDA
9 GND
10 12V
TO A BOARD A-12

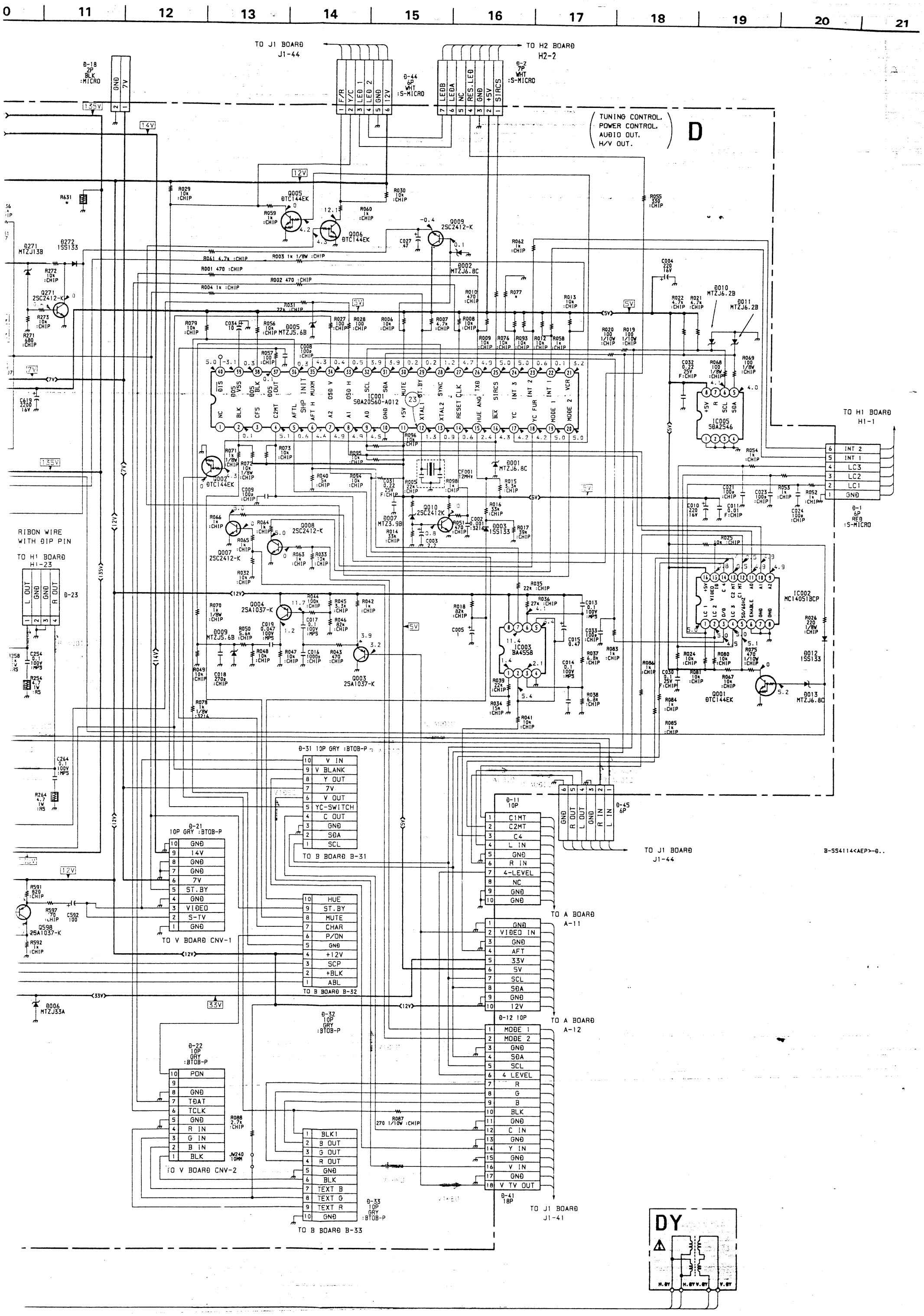
CN-41 18P
1 MODE 1
2 MODE 2
3 GND
4 SDA
5 SCL
6 4 LEVEL
7 R
8 G
9 B
10 BLK
11 GND
12 C IN
13 GND
14 Y IN
15 GND
16 V IN
17 GND
18 V TV OUT
TO J1 BOARD J1-41

CN-45 6P — GND, R OUT, L OUT, GND, R IN, L IN
TO J1 BOARD J1-44

CN-84 6P WHT :MINI — H+, H-, H+, V-, V+

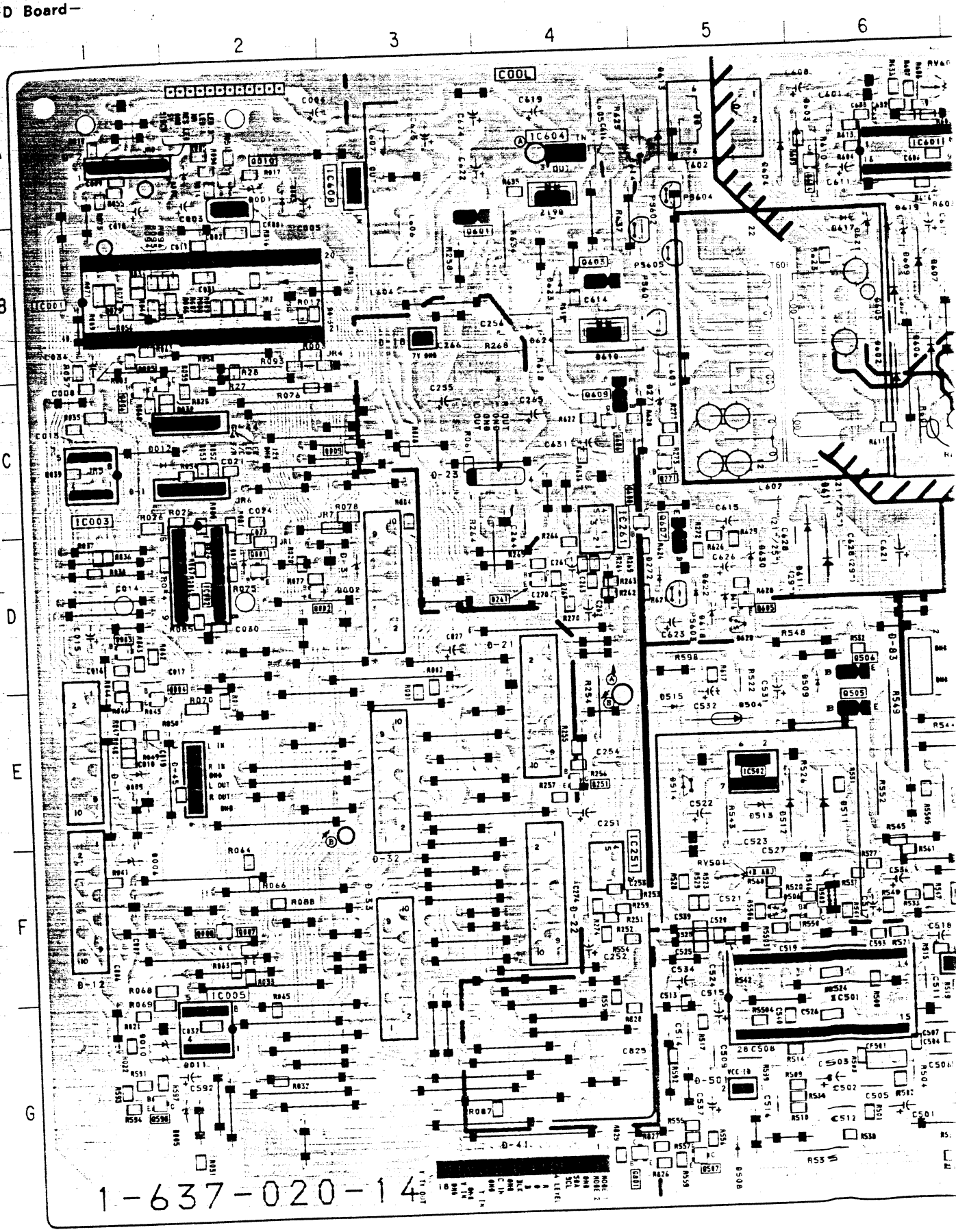
CN-1 6P RED :S-MIC — 6 INT 2, 5 INT 1, 4 LC3, 3 LC2, 2 LC1, 1 GND

B-SS4114<AEP


TO J1 BOARD
J1-44
TO H2 BOARD
H2-2
CN-18 2P BLK :MICRO
CN-44 6P WHT :S-MICRO
CN-2 7P WHT :S-MICRO
F/R
Y/C
LED 1
LED 2
GND
12V
LEDB
LEDA
NC
RES.LED
+5V
SIRCS
(TUNING CONTROL. POWER CONTROL. AUDIO OUT. H/V OUT.)
D
13.5V
14V
12V
7V
5V
R631 *
R029 10k :CHIP
R030 10k :CHIP
R055 330 :CHIP
Q005 DTC144EK
R059 1k :CHIP
R060 1k :CHIP
Q006 DTC144EK
Q009 2SC2412-K
C027 47
R062 1k :CHIP
Q271 MTZJ13B
Q272 1SS133
R061 4.7k :CHIP
R003 1k 1/8W :CHIP
R001 470 :CHIP
R002 470 :CHIP
R004 1k :CHIP
D002 MTZJ6.8C
R010 470 :CHIP
R077 *
R013 10k :CHIP
C004 220 16V
D010 MTZJ6.2B
D011 MTZJ6.2B
R022 4.7k :CHIP
R021 4.7k :CHIP
Q271 2SC2412-K
R272 10k :CHIP
R273 10k :CHIP
R271 680 :CHIP
R031 22k :CHIP
R079 10k :CHIP
C034 10
R056 10k :CHIP
D005 MTZJ5.6B
R027 100 :CHIP
R028 100 :CHIP
R006 10k :CHIP
R007 4.7k :CHIP
R008 10k :CHIP
R009 10k :CHIP
R076 10k :CHIP
R093 10k :CHIP
R012 10k :CHIP
R058 1k :CHIP
R020 100 1/10W :CHIP
R019 100 1/10W :CHIP
C008 100p :CHIP
R057 100 :CHIP
C032 0.22 25V F :CHIP
R068 100 1/8W :CHIP
R069 100 1/8W :CHIP
IC001 S0A20560-A012
IC005 S0A2546
TO H1 BOARD
H1-1
INT 2
INT 1
LC3
LC2
LC1
GND
CN-1 6P RED :S-MICRO
R096 10k :CHIP
R095 10k :CHIP
R071 1k 1/8W :CHIP
R072 10k 1/8W :CHIP
Q002 DTC144EK
R073 10k :CHIP
R040 5k :CHIP
R094 10k :CHIP
C009 100p :CHIP
C031 0.22 25V F :CHIP
D007 MTZ3.9B
R005 22k :CHIP
CF001 12MHz
R098 1k :CHIP
D001 MTZJ6.8C
R015 3.3k :CHIP
Q010 2SC2412K
R051 470 :CHIP
C002 0.001 :321G
D003 1SS133
R016 33k :CHIP
R017 39k :CHIP
C003 2.2
R014 33k :CHIP
C021 100p :CHIP
C023 100p :CHIP
R053 1k :CHIP
R052 1k :CHIP
C024 100p :CHIP
C010 220 16V
C011 0.01 F :CHIP
RIBON WIRE WITH CN-PIN
TO H1 BOARD
H1-23
L OUT
GND
GND
R OUT
CN-23
Q008 2SC2412-K
R066 1k :CHIP
R064 1k :CHIP
R065 1k :CHIP
Q007 2SC2412-K
R063 10k :CHIP
R033 10k :CHIP
R032 10k :CHIP
R025 10k :CHIP
IC002 MC14051BCP
R035 22k :CHIP
R036 27k :CHIP
R044 100k :CHIP
R045 3.3k :CHIP
R042 1k :CHIP
Q004 2SA1037-K
R070 1k 1/8W :CHIP
D009 MTZJ5.6B
R050 5.6k :CHIP
C019 0.047 100V :MPS
C017 0.1 100V :MPS
R046 82k :CHIP
R018 82k :CHIP
C005 1
C013 0.1 100V :MPS
C033 100p :CHIP
R083 1k :CHIP
IC003 BA4558
C015 0.47
C014 0.1 100V :MPS
R037 6.8k :CHIP
R038 6.8k :CHIP
R039 22k :CHIP
R034 15k :CHIP
R041 10k :CHIP
R049 10k :CHIP
C018 270p :CHIP
R048 10k :CHIP
R047 10k :CHIP
C016 1000p :CHIP
R043 470 :CHIP
Q003 2SA1037-K
R078 1k 1/8W :3216
R086 1k :CHIP
C030 0.1 25V F :CHIP
R081 10k :CHIP
R080 10k :CHIP
R067 10k :CHIP
R024 10k :CHIP
R075 470 1/10W :CHIP
Q001 DTC144EK
D012 1SS133
D013 MTZJ6.8C
R084 1k :CHIP
R085 1k :CHIP
R026 220 1/8W :CHIP
C254 0.1 100V :MPS
R254 4.7 1W :RS
C264 0.1 100V :MPS
R264 4.7 1W :RS
CN-31 10P GRY :BTOB-P
V IN
V BLANK
Y OUT
7V
V OUT
YC-SWITCH
C OUT
GND
SDA
SCL
TO B BOARD B-31
CN-21 10P GRY :BTOB-P
GND
14V
GND
GND
7V
ST.BY
GND
VIDEO
S-TV
GND
TO V BOARD CNV-1
R591 820 :CHIP
R597 470 :CHIP
C592 100
Q598 2SA1037-K
R592 1k :CHIP
HUE
ST.BY
MUTE
CHAR
P/ON
GND
+12V
SCP
+BLK
ABL
TO B BOARD B-32
D006 MTZJ33A
CN-32 10P GRY :BTOB-P
CN-22 10P GRY :BTOB-P
PON
GND
TDAT
TCLK
GND
R IN
G IN
B IN
BLK
TO V BOARD CNV-2
R088 2.7k :CHIP
JW240 10MM
R087 270 1/10W :CHIP
BLK1
B OUT
G OUT
R OUT
GND
BLK
TEXT B
TEXT G
TEXT R
GND
CN-33 10P GRY :BTOB-P
TO B BOARD B-33
CN-11 10P
C1MT
C2MT
C4
L IN
GND
R IN
4-LEVEL
NC
GND
GND
VIDEO IN
GND
AFT
33V
5V
SCL
SDA
GND
12V
CN-12 10P
TO A BOARD
A-12
MODE 1
MODE 2
GND
SDA
SCL
4 LEVEL
R
G
B
BLK
GND
C IN
GND
Y IN
GND
V IN
GND
V TV OUT
CN-41 18P
TO J1 BOARD
J1-41
CN-45 6P
GND
R OUT
L OUT
GND
R IN
L IN
TO J1 BOARD
J1-44
B-SS4114<AEP>-0..
DY
H.DY
H.DY
V.DY
V.DY

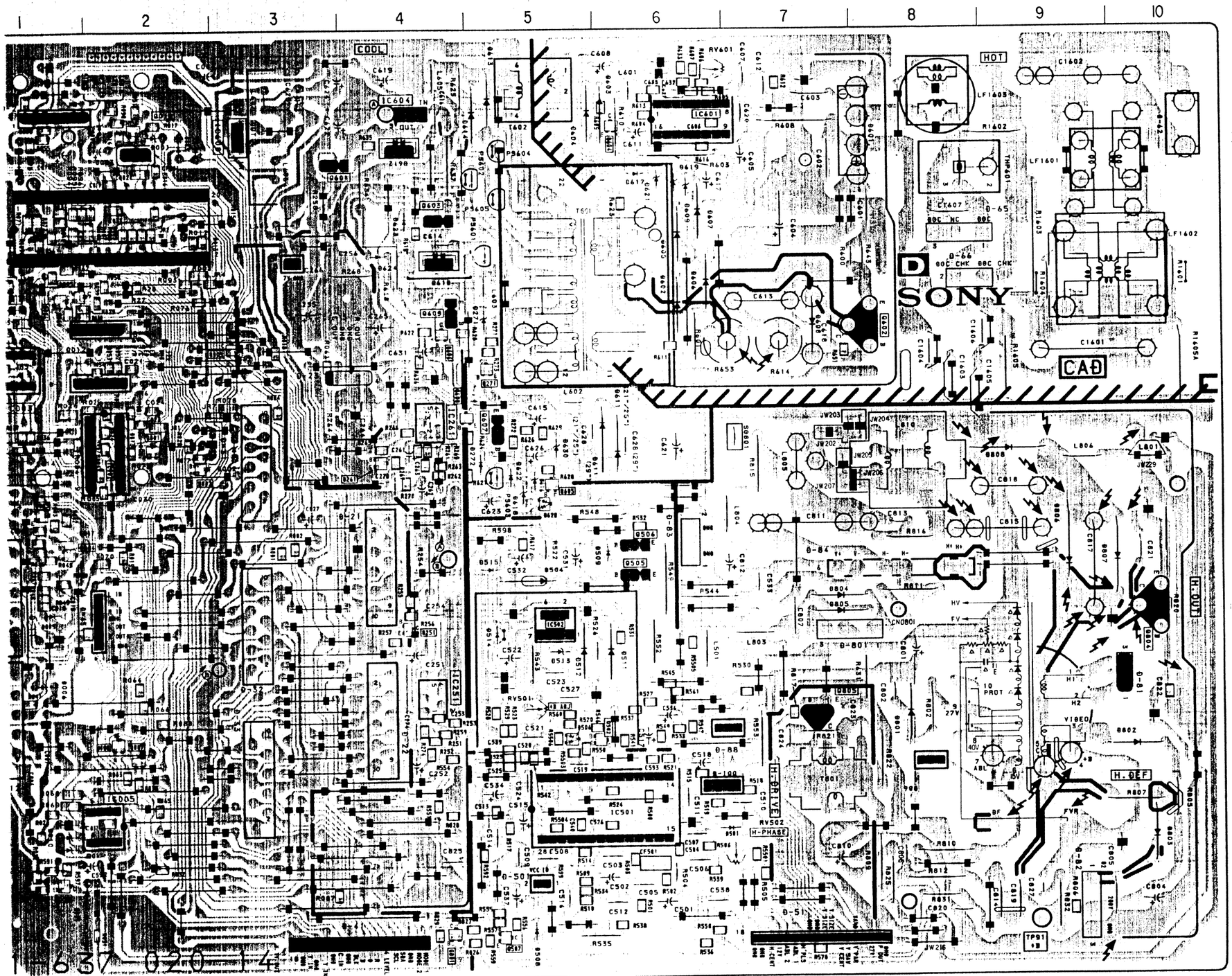
## D [TUNING CONTROL, POWER CONTROL, AUDIO OUT, H/V OUT]

—D Board—



UNING CONTROL, POWER CONTROL,
UDIO OUT, H/V OUT

1–



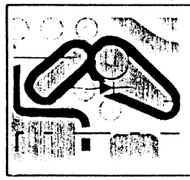

| IC | |
|---|---|
| IC001 | B – 2 |
| IC002 | C – 2 |
| IC003 | C – 1 |
| IC005 | G – 2 |
| IC251 | F – 4 |
| IC261 | D – 4 |
| IC501 | G – 6 |
| IC502 | E – 5 |
| IC601 | A – 6 |
| IC604 | A – 4 |
| IC608 | A – 3 |

| TRANSISTOR | |
|---|---|
| Q001 | C – 2 |
| Q002 | C – 2 |
| Q003 | D – 1 |
| Q004 | D – 4 |
| Q005 | C – 1 |
| Q006 | C – 1 |
| Q007 | F – 2 |
| Q008 | F – 2 |
| Q009 | C – 3 |
| Q010 | A – 2 |
| Q251 | E – 4 |
| Q271 | C – 5 |
| Q502 | F – 5 |
| Q505 | E – 6 |
| Q506 | D – 6 |
| Q507 | G – 4 |
| Q598 | G – 1 |
| Q601 | B – 3 |
| Q602 | C – 8 |
| Q603 | B – 4 |
| Q604 | A – 6 |
| Q605 | D – 5 |
| Q606 | C – 4 |
| Q607 | D – 5 |
| Q608 | C – 4 |
| Q609 | C – 4 |
| Q801 | G – 4 |
| Q804 | E – 10 |
| Q805 | F – 7 |

| DIODE | |
|---|---|
| D001 | A – 2 |
| D002 | D – 3 |
| D003 | A – 2 |
| D005 | G – 1 |
| D006 | F – 1 |
| D007 | A – 2 |
| D009 | E – 1 |
| D010 | G – 1 |
| D011 | G – 1 |
| D012 | C – 1 |
| D013 | D – 2 |
| D271 | C – 5 |
| D272 | D – 5 |
| D501 | G – 7 |
| D504 | E – 5 |
| D506 | F – 5 |
| D508 | G – 5 |
| D509 | F – 5 |
| D511 | E – 6 |
| D512 | E – 5 |
| D513 | E – 5 |
| D514 | E – 5 |
| D515 | E – 5 |
| D601 | A – 8 |
| D602 | C – 6 |
| D603 | A – 5 |
| D604 | A – 4 |
| D605 | B – 6 |
| D606 | B – 6 |
| D607 | B – 6 |
| D608 | C – 7 |
| D609 | B – 6 |
| D610 | B – 4 |
| D611 | D – 6 |
| D612 | A – 4 |
| D613 | A – 5 |
| D614 | A – 5 |
| D616 | D – 5 |
| D617 | B – 6 |
| D618 | D – 5 |
| D619 | B – 6 |
| D620 | D – 5 |
| D621 | B – 6 |
| D622 | D – 5 |
| D623 | B – 4 |
| D624 | B – 4 |
| D630 | D – 5 |
| D801 | F – 8 |
| D802 | F – 10 |
| D803 | G – 10 |
| D804 | E – 7 |
| D805 | E – 7 |
| D806 | E – 9 |
| D807 | E – 10 |
| D808 | D – 9 |

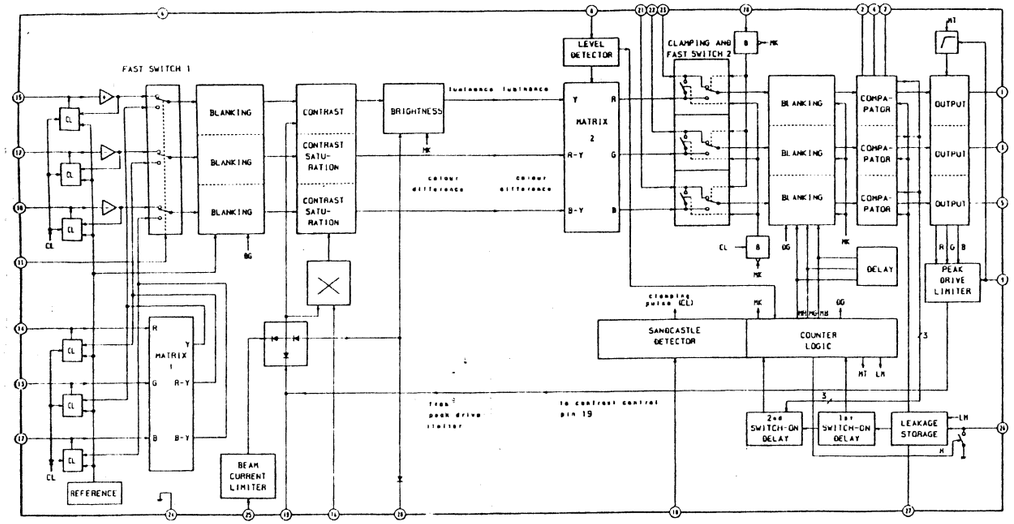
| VARIABLE RESISTOR | |
|---|---|
| RV501 | F – 5 |
| RV502 | G – 7 |
| RV601 | A – 6 |

| TP | |
|---|---|
| TP91 | G – 9 |



**NOTE:**
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

## B BOARD IC301 TDA4580-V7




## B BOARD IC302 TDA8442-N3




## B BOARD IC303 MC14053BCP




## B BOARD IC331 TDA4650






## · WAVEFORMS B BOARD

| | | | | | |
|---|---|---|---|---|---|
| ① PAL, SECAM<br>4.8 Vp-p( H ) | ① NTSC 3.58/4.43<br>5.0Vp-p ( H ) | ② PAL, SECAM<br>4.8Vp-p ( H ) | ② NTSC 3.58/4.43<br>4.8Vp-p ( H ) | ③ PAL, SECAM<br>4.8Vp-p ( H ) | ③ NTSC 3.58/4.43<br>4.8Vp-p ( H ) |
| ④<br>9.5Vp-p ( H ) | ⑤ PAL<br>0.4Vp-p ( H ) | ⑤ SECAM<br>0.36Vp-p ( H ) | ⑤ NTSC 3.58/4.43<br>0.46Vp-p( H ) | ⑥ PAL, SECAM<br>0.9Vp-p ( H ) | ⑥ NTSC 3.58/4.43<br>0.7Vp-p ( H ) |
| ⑦ PAL, SECAM<br>1.1 Vp-p ( H ) | ⑦ NTSC 3.58/4.43<br>1.25Vp-p ( H ) | ⑧ PAL<br>0.5Vp-p ( H ) | ⑧ SECAM<br>1.1Vp-p ( H ) | ⑧ NTSC 3.58/4.43<br>0.4Vp-p ( H ) | ⑨ PAL<br>0.6Vp-p ( H ) |
| ⑨ SECAM<br>1.5 Vp-p( H ) | ⑨ NTSC 3.58/4.43<br>0.6Vp-p ( H ) | ⑩ SECAM<br>0.75Vp-p ( H ) | ⑪ SECAM<br>0.2Vp-p ( H ) | ⑫ PAL<br>0.2Vp-p ( H ) | ⑫ SECAM<br>0.12Vp-p ( H ) |
| ⑫ NTSC 3.58/4.43<br>0.17Vp-p ( H ) | ⑬ PAL<br>0.4Vp-p ( H ) | ⑬ SECAM<br>0.12Vp-p ( H ) | ⑬ NTSC 3.58/4.43<br>0.3Vp-p ( H ) | ⑭ PAL<br>1.25 Vp-p( H ) | ⑭ SECAM<br>1.25Vp-p ( H ) |
| ⑭ NTSC 3.58/4.43<br>1.1Vp-p ( H ) | ⑮ PAL<br>1.25Vp-p ( H ) | ⑮ SECAM<br>1.25 Vp-p ( H ) | ⑮ NTSC 3.58/4.43<br>1.2Vp-p ( H ) | ⑯ PAL, NTSC<br>0.5Vp-p ( H ) | ⑯ NTSC 3.58/4.43<br>0.5Vp-p ( H ) |

As to the voltage value shown by the mark ※ on the Schematic Diagram, see the another list.

| | | PAL | SECAM | NTSC3.58 | NTSC4.43 |
|---|---|---|---|---|---|
| IC301 | (8) | 0.1 | 0.1 | 5.8 | 0.1 |
| | (26) | 6.7 | 6.8 | 5.1 | 6.5 |
| IC331 | (19) | 3.1 | 3.6 | 3.1 | 2.8 |
| | (21) | 3.0 | 3.5 | 2.9 | 2.7 |
| | (22) | 5.6 | 5.6 | 7.1 | 7.2 |
| | (23) | 7.5 | 7.0 | 5.6 | 5.6 |
| | (25) | 0.1 | 0.1 | 0.1 | 5.8 |
| | (26) | 0.1 | 0.1 | 5.8 | 0.1 |
| | (27) | 0.1 | 5.8 | 0.1 | 0.1 |
| | (28) | 5.9 | 0.1 | 0.1 | 0.1 |
| Q331 | (B) | 0.1 | 0.1 | 5.8 | 0.1 |
| | (C) | 0.3 | 0.4 | 0 | 0.8 |
| Q333 | (B) | 4.4 | 4.4 | 4.4 | 4.4 |
| Q334 | (B) | 4.9 | 0.1 | 4.8 | 4.8 |
| Q335 | (B) | 0.1 | 4.8 | 0.1 | 0.1 |

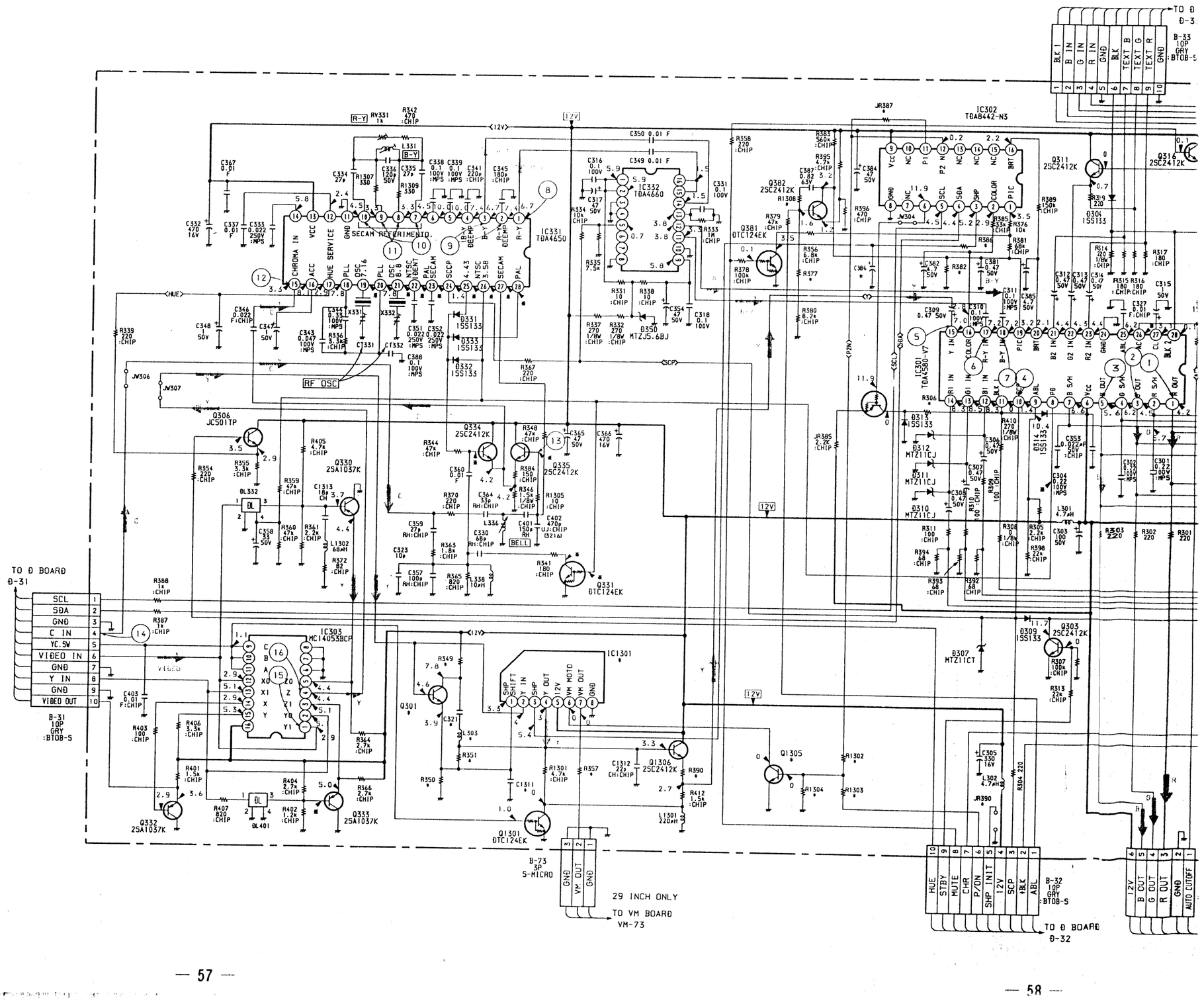
## • B BOARD

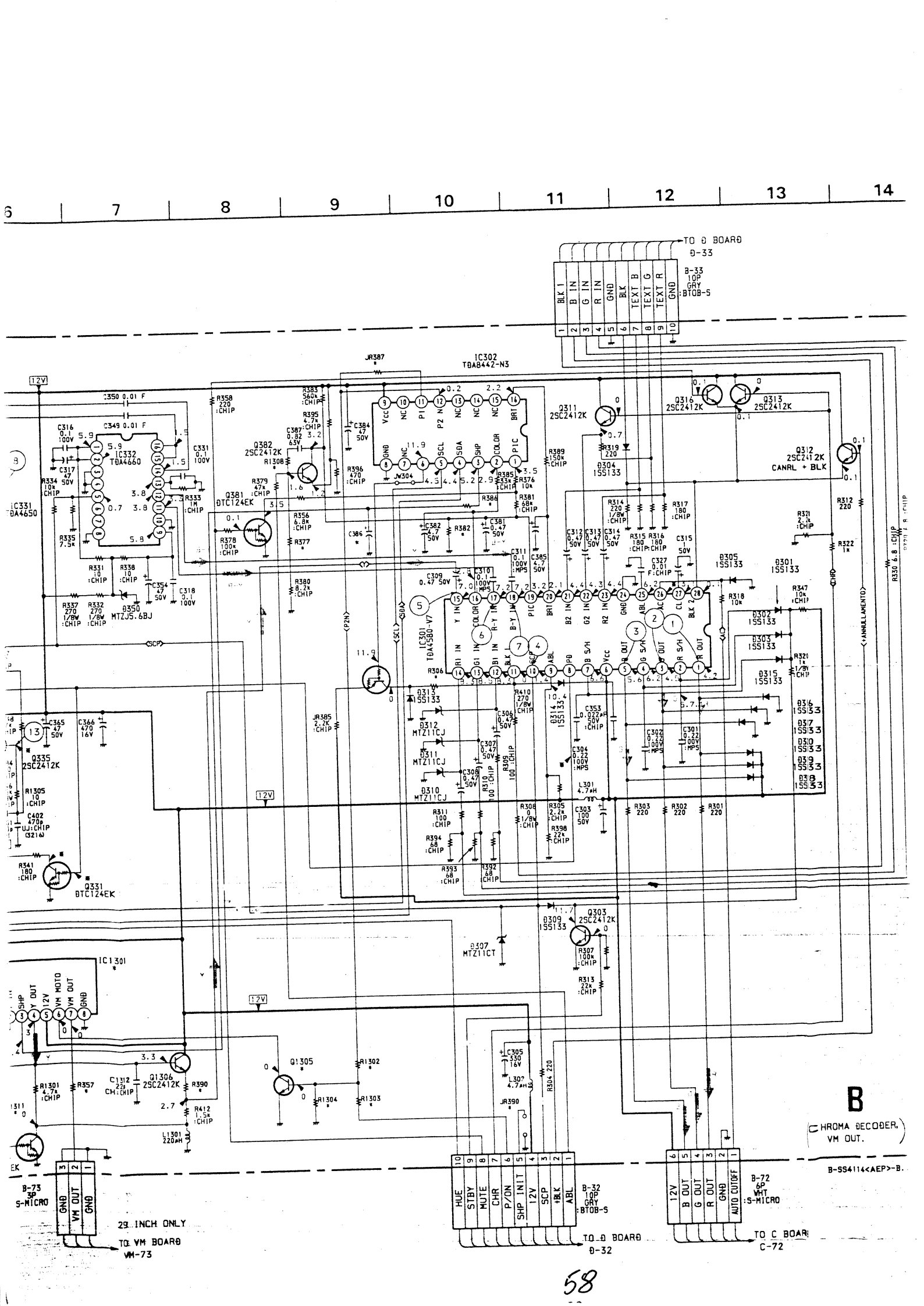
| | | |
|---|---|---|
| IC301 | TDA4580-V7 | VIDEO PROCESSOR |
| IC302 | TDA8442-N3 | D/A CONVERTER I ² C BUS |
| IC303 | MC14053BCP | Y/C COMP SW |
| IC331 | TDA4650 | COLOR PROCESSOR |
| IC332 | TDA4660-V2 | 1H-DEALY |
| IC1301 | HIC2110 | SHARPNESS CONTROL (29 INCH ONLY) |
| | | |
| Q301 | 2SC2412K | Y AMP (21/25 INCH ONLY) |
| Q303 | 2SC2412K | STBY SW |
| Q305 | DTA144EK | ANTI PRIORITY SCART |
| Q306 | JC501 | VIDEO BUF (HUE) |
| Q311 | 2SC2412K | ON SCREEN DISPLAY SW |
| Q312 | 2SC2412K | CANRL + BLK |
| Q313 | 2SC2412K | ON SCREEN DISPLAY |
| Q316 | 2SC2412K | FAS PICTURE MUTE SW |
| Q330 | 2SA1037K | VIDEO AMP |
| Q331 | DTC124EK | NTSC SW |
| Q332 | 2SA1037K | VIDEO BUFF |
| Q333 | 2SA1037K | Y AMP |
| Q334 | 2SC2412K | PAL/NTSC SW |
| Q335 | 2SC2412K | SECAM SW |
| Q381 | DTC124EK | MUTE |
| Q382 | 2SC2412K | ABL |
| Q1301 | DTC124EK | Y BUFF |
| Q1305 | 2SC2412K | Y OUT (29 INCH ONLY) |
| Q1306 | 2SC2412K | Y OUT |
| | | |
| D301 | 1SS133 | ACO AT STBY |
| D302 | 1SS133 | ACO AT STBY |
| D303 | 1SS133 | ACO AT STBY |
| D304 | 1SS133 | DECOUPLING BLK |
| D305 | 1SS133 | PROT |
| D307 | MTZ11C | PROT |
| D309 | 1SS133 | PROT |
| D310 | MTZ11C | PROT |
| D311 | MTZ11C | PROT |
| D312 | MTZ11C | PROT |
| D313 | 1SS133 | PROT |
| D314 | 1SS133 | PROT |
| D315 | 1SS133 | PROT |
| D316 | 1SS133 | PROT |
| D317 | 1SS133 | PROT |
| D318 | 1SS133 | PROT |
| D319 | 1SS133 | PROT |
| D320 | 1SS133 | PROT |
| D331 | 1SS133 | SECAM SW |
| D332 | 1SS133 | SECAM SW |
| D333 | 1SS133 | SECAM SW |
| D350 | MTZJ5.6C | PROT |

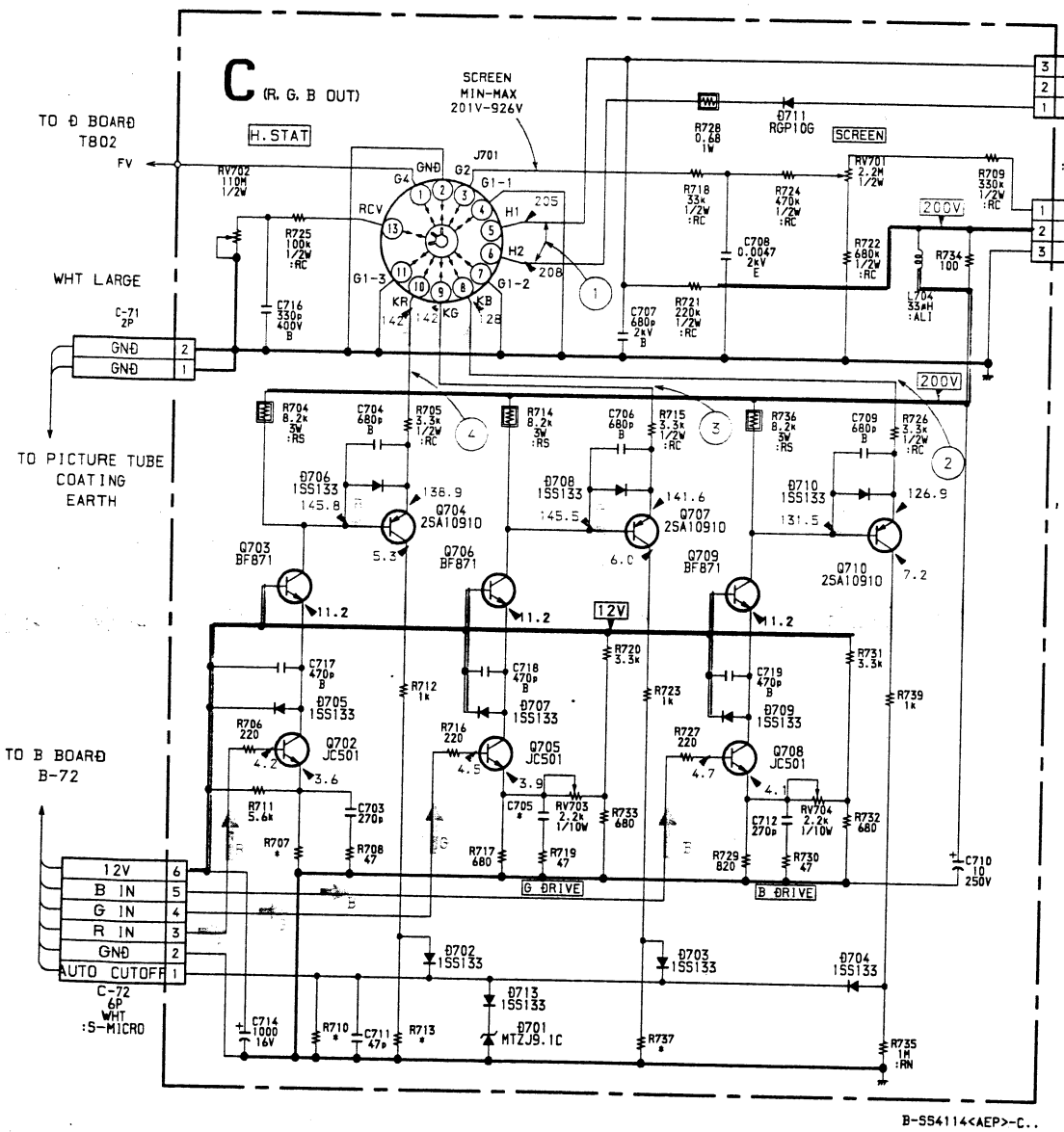
## B BOARD * MARK

| | 21" | 25" | 29" |
|---|---|---|---|
| B-73 | - | - | 3P |
| | | | |
| C321 | 100P | 100P | - |
| C386 | - | - | 4.7 50V |
| C1311 | 56P | 56P | 33P |
| | | | |
| IC1301 | - | - | HIC2110 |
| | | | |
| JR387 | - | - | 0 : CHIP |
| JR390 | 0 : CHIP | 0 : CHIP | - |
| | | | |
| L303 | 5.6 μ H | 5.6 μ H | - |
| | | | |
| Q301 | 2SC2412K | 2SC2412K | - |
| Q1305 | - | - | 2SC2412K |
| | | | |
| R306 | - | - | 0 : CHIP |
| R349 | 680 | 680 | - |
| R350 | 680 | 680 | - |
| R351 | 220 | 680 | - |
| R357 | - | - | 220 |
| R377 | 330 | 330 | 1.8K |
| R382 | 270K | 220K | 220K |
| R386 | - | - | 3.3K |
| R390 | 220 | 220 | 100 |
| R1302 | - | - | 47K |
| R1303 | - | - | 47K |
| R1304 | - | - | 100K |
| R1308 | 0 | 0 | 4.7K |

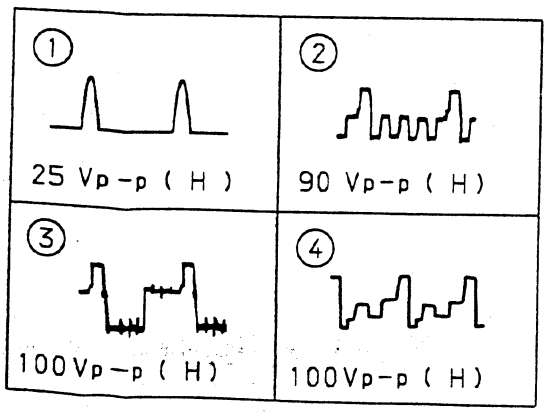
- : NOT MOUNTED




6
7
8
9
10
11
12
13
14
TO B BOARD
B-33
B-33
10P
GRY
:BTOB-S
BLK I
B IN
G IN
R IN
GND
BLK
TEXT B
TEXT G
TEXT R
GND
IC302
T0A8442-N3
IC331
T0A4650
IC332
T0A4660
IC301
T0A4580-V7
Q311
2SC2412K
Q312
2SC2412K
CANRL + BLK
Q313
2SC2412K
Q316
2SC2412K
Q381
0TC124EK
Q382
2SC2412K
Q335
2SC2412K
Q331
0TC124EK
Q350
MTZJ5.6BJ
Q303
2SC2412K
Q1306
2SC2412K
Q1305
D304
1SS133
D305
1SS133
D301
1SS133
D302
1SS133
D303
1SS133
D315
1SS133
D316
1SS133
D317
1SS133
D310
1SS133
D309
1SS133
D314
1SS133
D312
MTZ11CJ
D311
MTZ11CJ
D310
MTZ11CJ
D307
MTZ11CT
IC1301
B-73
3P
S-MICRO
GND
VM OUT
GND
29 INCH ONLY
TO VM BOARD
VM-73
B-32
10P
GRY
:BTOB-S
HUE
STBY
MUTE
CHR
P/ON
SHP INIT
12V
SCP
+BLK
ABL
TO B BOARD
B-32
B-72
6P
WHT
:S-MICRO
12V
B OUT
G OUT
R OUT
GND
AUTO CUTOFF
TO C BOARD
C-72
B
CHROMA DECODER,
VM OUT.
B-SS4114<AEP>-B.
12V
SCP
SDA
SCL
P2N
CHRO
(+ANNULLAMENTO)




## • WAVEFORMS C BOARD

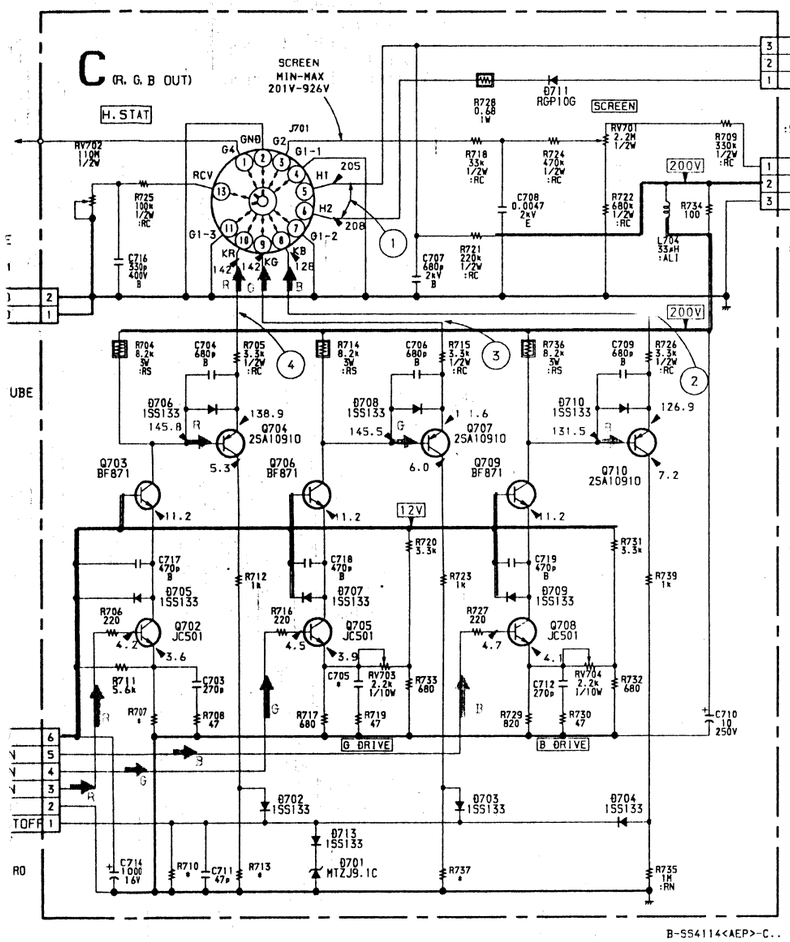


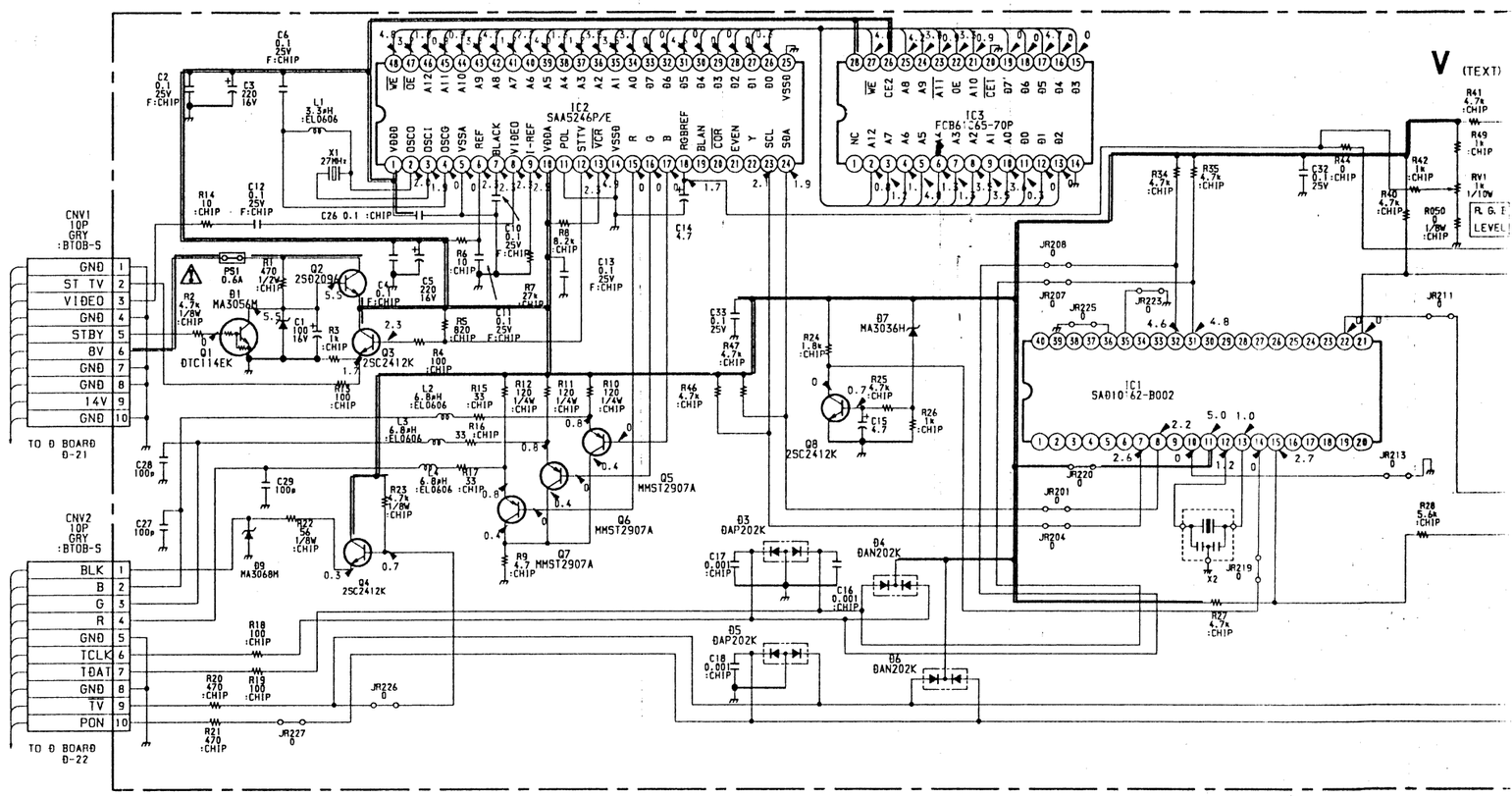

## • C BOARD

| | | |
|---|---|---|
| Q702 | JC501 | R DRIVE |
| Q703 | BF871 | R OUT |
| Q704 | 2SA1091O | ACO MEASURING |
| Q705 | JC501 | G DRIVE |
| Q706 | BF871 | G OUT |
| Q707 | 2SA1091O | ACO MEASURING |
| Q708 | JC501 | B DRIVE |
| Q709 | BF871 | B OUT |
| Q710 | 2SA1091O | ACO MEASURING |
| | | |
| D701 | MTZJ9.1C | PROTECT |
| D702 | 1SS133 | PROTECT |
| D703 | 1SS133 | PROTECT |
| D704 | 1SS133 | PROTECT |
| D705 | 1SS133 | PROTECT |
| D706 | 1SS133 | PROTECT |
| D707 | 1SS133 | PROTECT |
| D708 | 1SS133 | PROTECT |
| D709 | 1SS133 | PROTECT |
| D710 | 1SS133 | PROTECT |
| D711 | RGP10G | HEATING VOLTAGE REC |
| D713 | 1SS133 | PROTECT |

## C BOARD

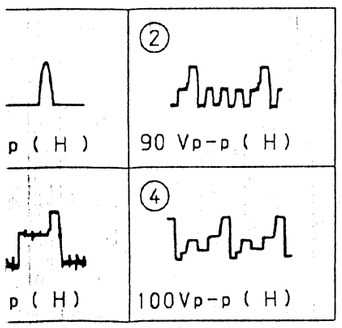
| | |
|---|---|
| C705 | |
| | |
| R707 | |
| R710 | |
| R713 | |
| R737 | |




B-SS4114<AEP>-V

### ORMS C BOARD




### • C BOARD

| | | |
|---|---|---|
| Q702 | JC501 | R DRIVE |
| Q703 | BF871 | R OUT |
| Q704 | 2SA1091O | ACO MEASURING |
| Q705 | JC501 | G DRIVE |
| Q706 | BF871 | G OUT |
| Q707 | 2SA1091O | ACO MEASURING |
| Q708 | JC501 | B DRIVE |
| Q709 | BF871 | B OUT |
| Q710 | 2SA1091O | ACO MEASURING |
| | | |
| D701 | MTZJ9.1C | PROTECT |
| D702 | 1SS133 | PROTECT |
| D703 | 1SS133 | PROTECT |
| D704 | 1SS133 | PROTECT |
| D705 | 1SS133 | PROTECT |
| D706 | 1SS133 | PROTECT |
| D707 | 1SS133 | PROTECT |
| D708 | 1SS133 | PROTECT |
| D709 | 1SS133 | PROTECT |
| D710 | 1SS133 | PROTECT |
| D711 | RGP10G | HEATING VOLTAGE REC |
| D713 | 1SS133 | PROTECT |

### C BOARD * MARK

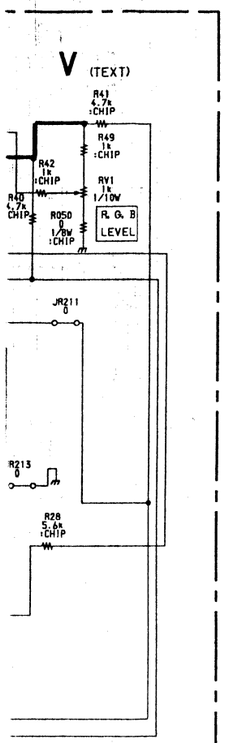
| | 21″ | 25″ | 29″ |
|---|---|---|---|
| C705 | 180P | 220P | 220P |
| | | | |
| R707 | 430 | 390 | 390 |
| R710 | 100K | 68K | 68K |
| R713 | 160K | 120K | 120K |
| R737 | 390K | 820K | 470K |

– : NOT MOUNTED

### • V BOARD

| | | |
|---|---|---|
| IC1 | SDA20162-B002 | MICRO-CONT |
| IC2 | SAA5246P/E | IVT |
| IC3 | FCB61C65-70P | STATIC-RAM |
| | | |
| Q1 | DTC114EK | STAD BY |
| Q2 | 2SD2096 | 5V REG |
| Q3 | 2SC2412K | SYNC BUFFER |
| Q4 | 2SC2412K | BLK OUT |
| Q5 | MMST2907A | B OUT |
| Q6 | MMST2907A | G OUT |
| Q7 | MMST2907A | R OUT |
| Q8 | 2SC2412K | RESET |
| | | |
| D1 | MA3056M | 5V REG |
| D3 | DAP202K | PROTEC |
| D4 | DAN202K | PROTEC |
| D5 | DAP202K | PROTEC |
| D6 | DAN202K | PROTEC |
| D7 | MA3036H | PROTEC |
| D9 | MA3068M | PROTEC |

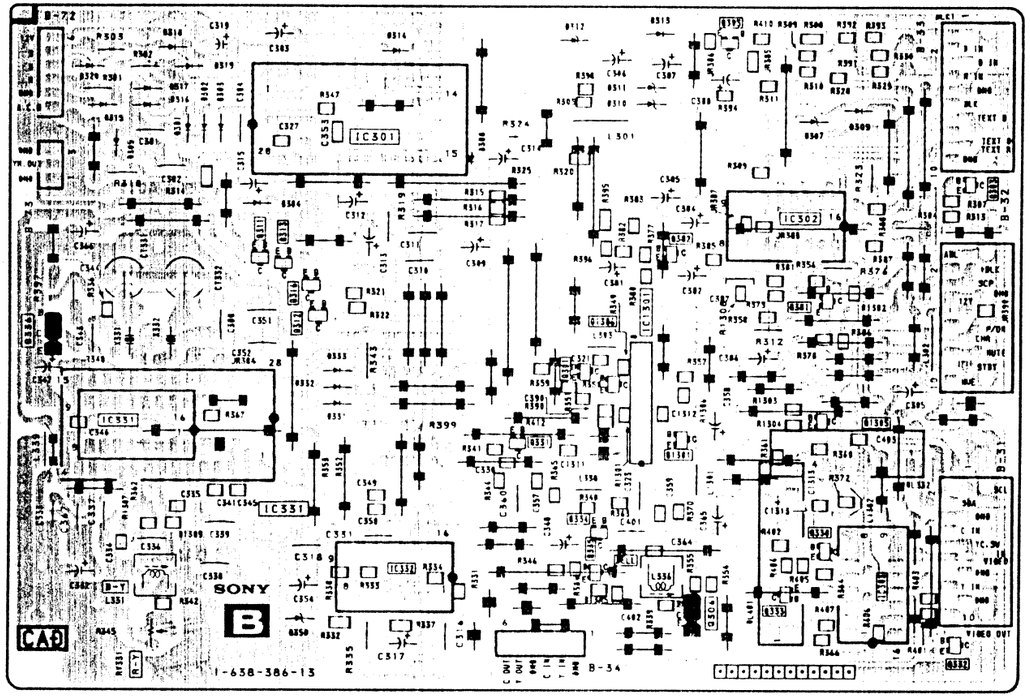
V (TEXT)



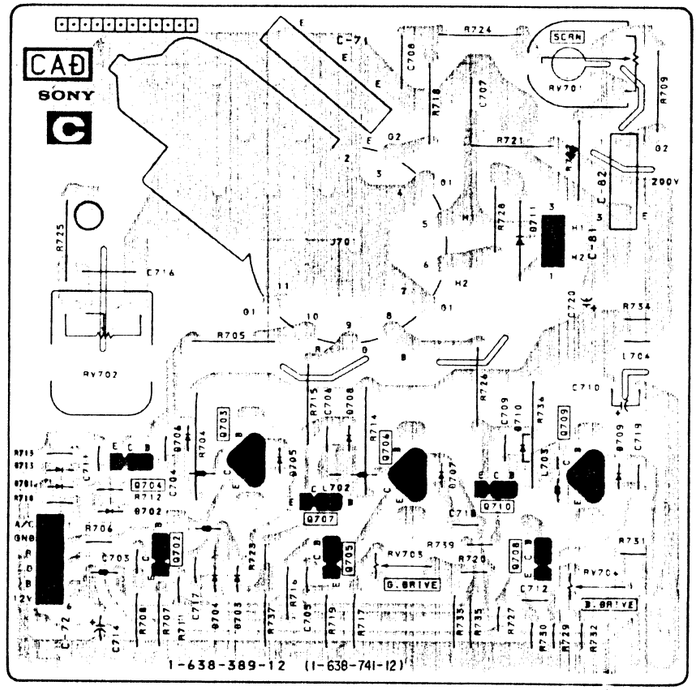

B-SS4114<AEP>-V..

B [CHROMA DECODER VM OUT] C [R. G. B OUT] V [TELE TEXT]

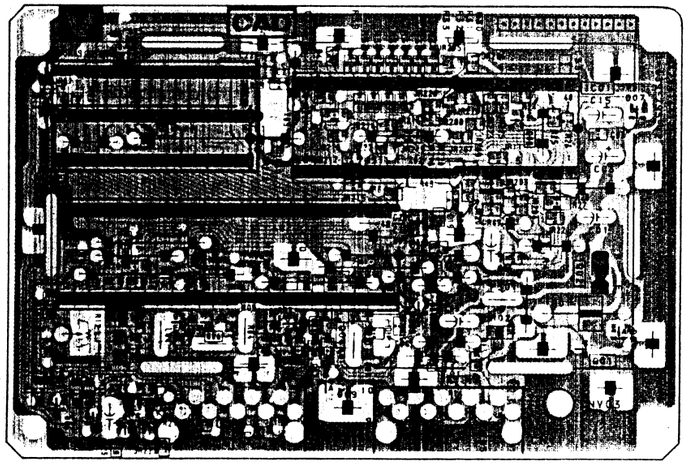
—B Board—




—C Board—




—V Board—

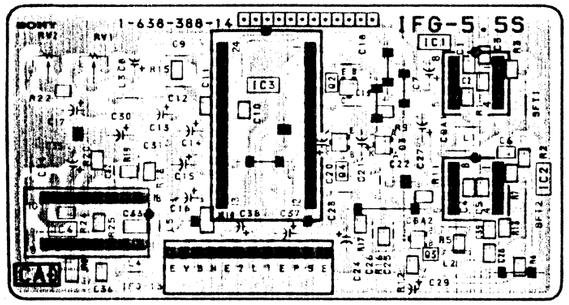


• ▒▒▒: Pattern from the side which enables seeing.

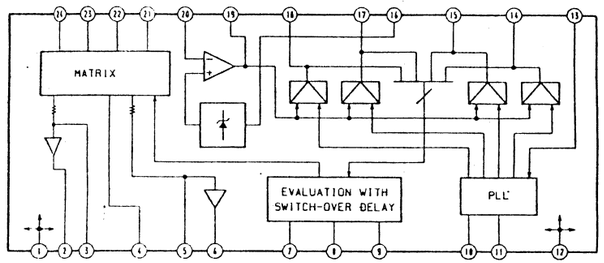
• ▓▓▓: Pattern of the rear side.

# IFG [SIF]

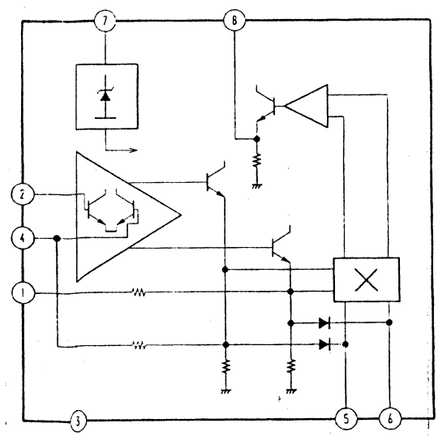
– IFG-5.5S Board –



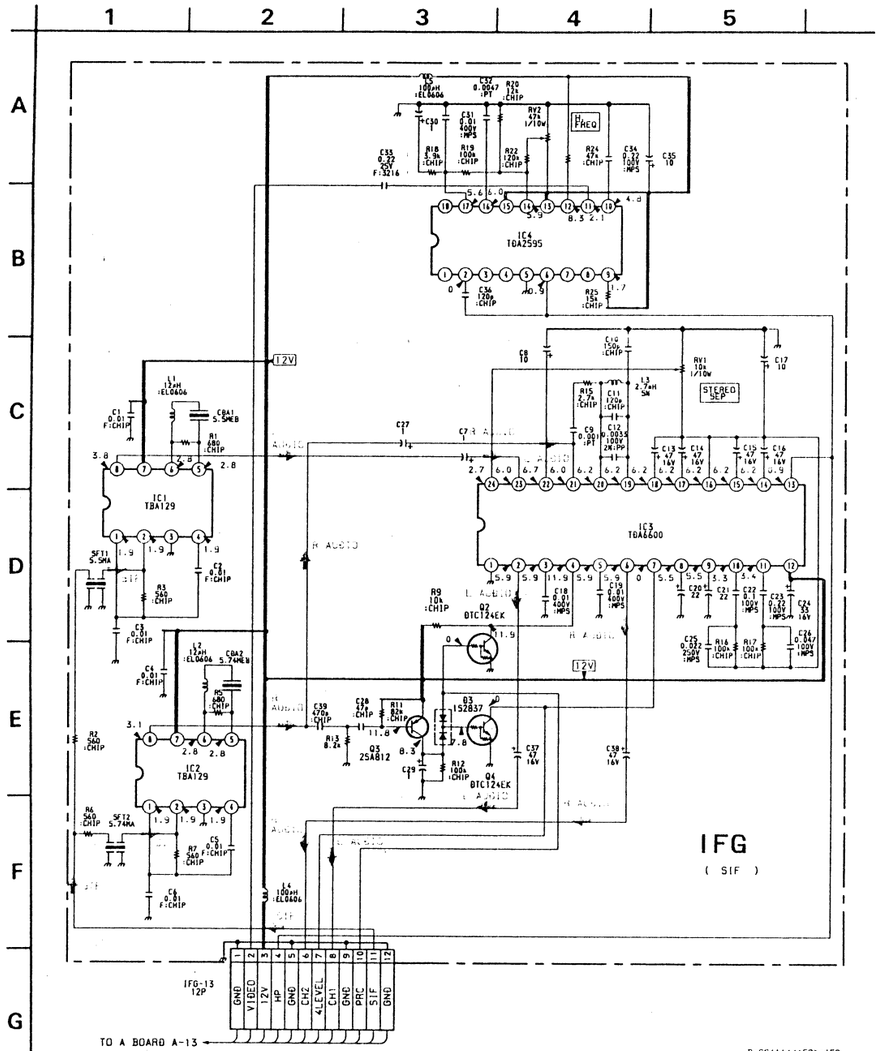

IFG-5.5S BOARD IC3 TDA6600



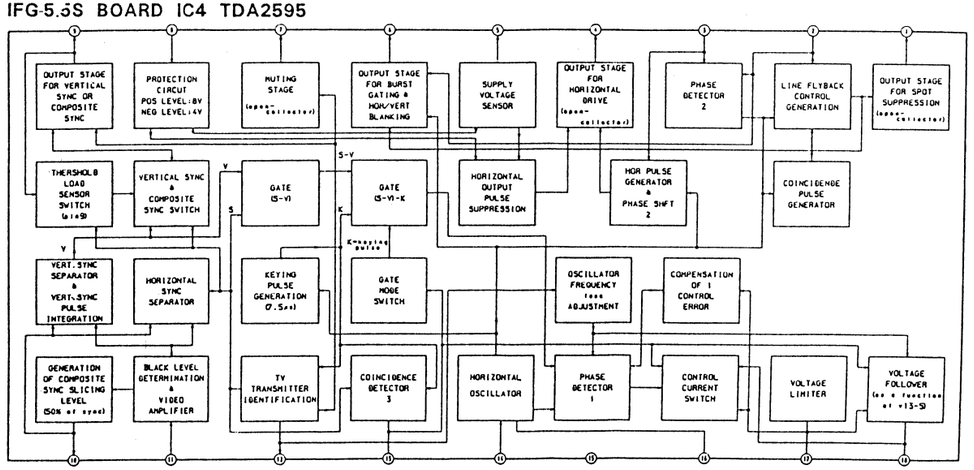

IFG-5.5S BOARD IC1/2 TBA129







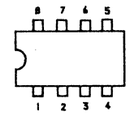

IFG-5.5S BOARD IC4 TDA2595





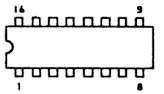

## 5-4. SEMICONDUCTORS

BA4558
NE5532P
RC4558P
SDA2546
TBA129
TDA1543
TEA2014A
TEA2031A

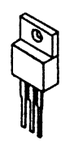



CXA1114P
CXK5864BP-10L
FCB61C65-70P
MAB8461P-W208
SAA7280P/M3
TC5565APL-15L
TDA4580-V7
TDA4650-V4
TDA6200
TEA2028B


HD14053BFP
MC14051BCP
PCF8574
TDA4660V2
TDA8442-N3
TEA2260
μ PD4053BC

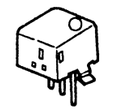



LM7812CT
TEA7605

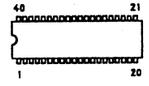


SAA5246P/E/M4A
SAA5246P/E
SAA5246P/H

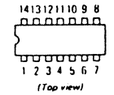

SBX1610-11



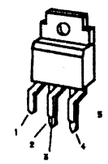
SDA20560-A012



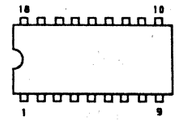

SN74LS02N



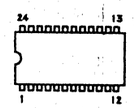

TDA2050



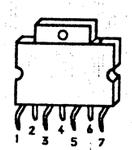

TDA2595-V9



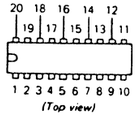

TDA6600-2




TDA8170




TDA8732



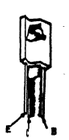

BF871


DTA144EK
DTC114EK
DTC124EK
DTC144EK
2SA1162-G
2SB1295-UL6
2SC1623-L5L6


DTC144ES

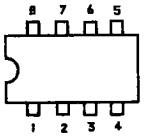

2SA1091-0
2SD789-34


2SA1220A-P
2SC2688-LK

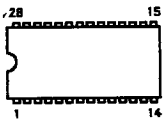


## 5-4. SEMICONDUCTORS

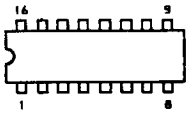
BA4558
NE5532P
RC4558P
SDA2546
TBA129
TDA1543
TEA2014A
TEA2031A




CXA1114P
CXK5864BP-10L
FCB61C65-70P
MAB8461P-W208
SAA7280P/M3
TC5565APL-15L
TDA4580-V7
TDA4650-V4
TDA6200
TEA2028B




HD14053BFP
MC14051BCP
PCF8574
TDA4660V2
TDA8442-N3
TEA2260
μ PD4053BC

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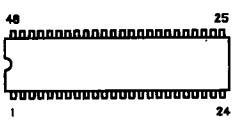


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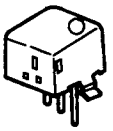

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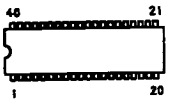


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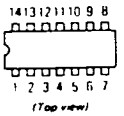


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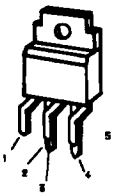


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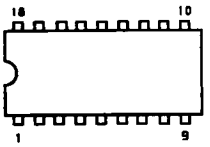


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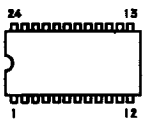


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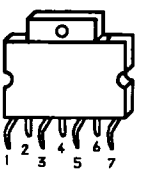


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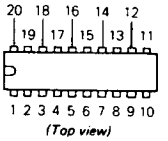


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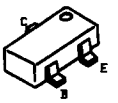


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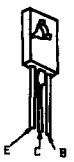


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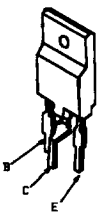


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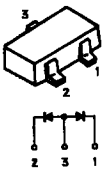


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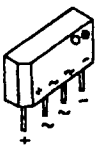


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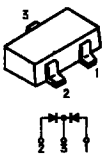

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MTZJ-3.9B
MTZJ-33A
MTZJ-36D
MTZN-10C
RD11ES-B3
RD5.6ESB2
RD6.2ES-B2
RD6.8ESB2
RD7.5ESB2
RD9.1ESB3
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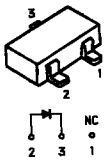


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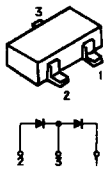
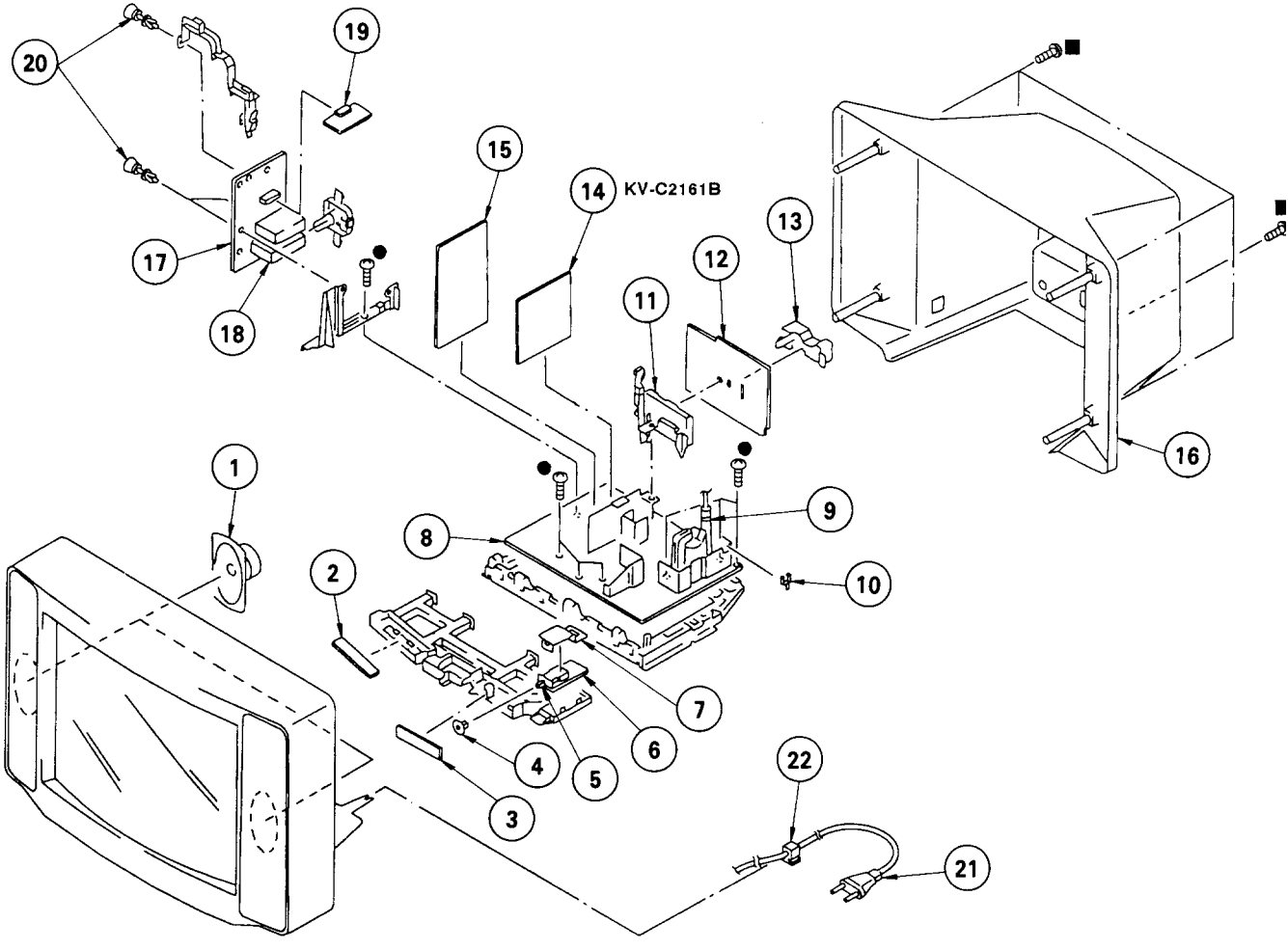


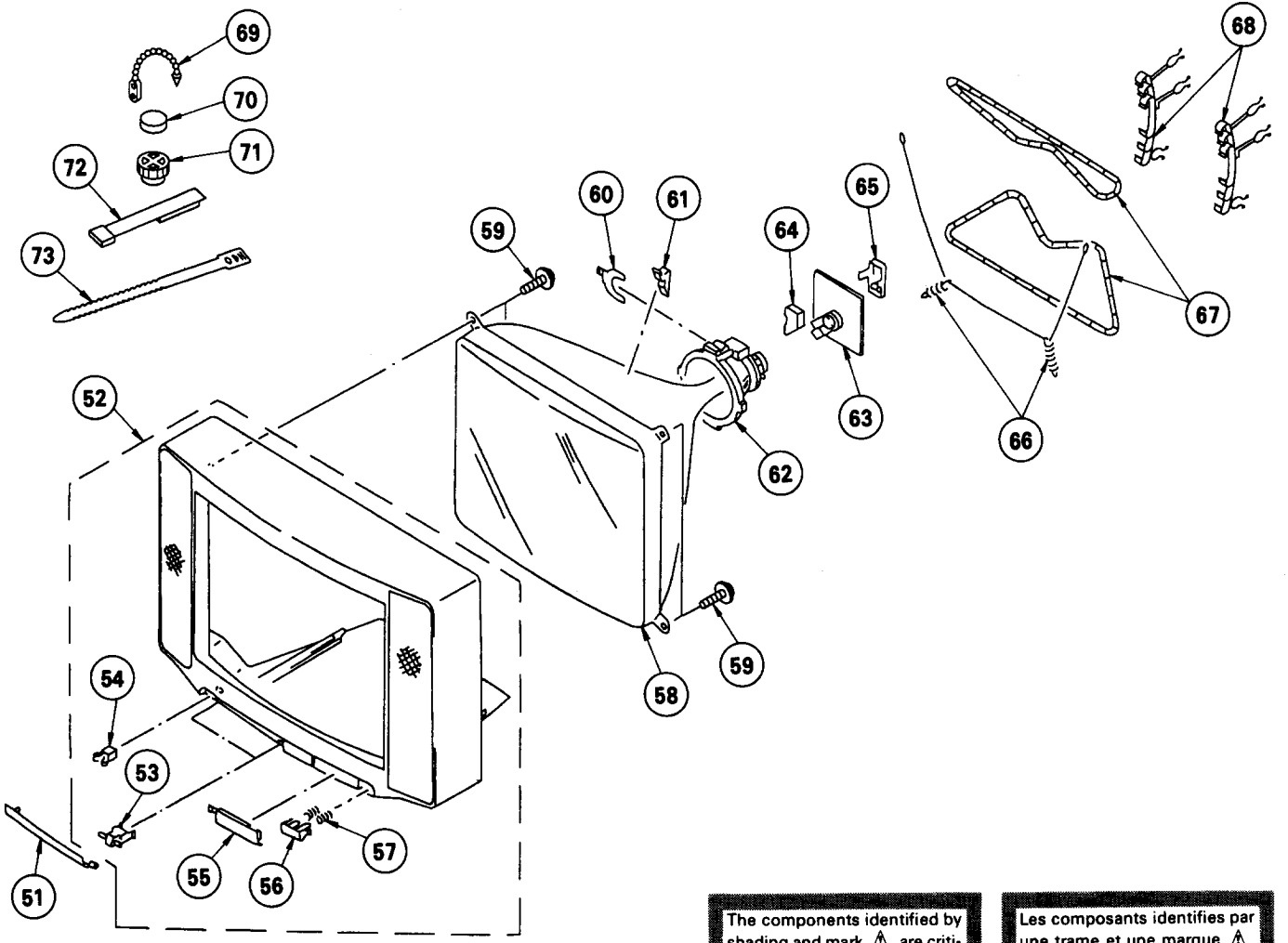
## 6-1. CHASSIS (KV-C2160B/C2161B)

● : BVTP 3 × 12 7-685-648-79

■ : BVTP 4 × 16 7-685-663-79



## 6-2. PICTURE TUBE (KV-C2160B/C2161B)



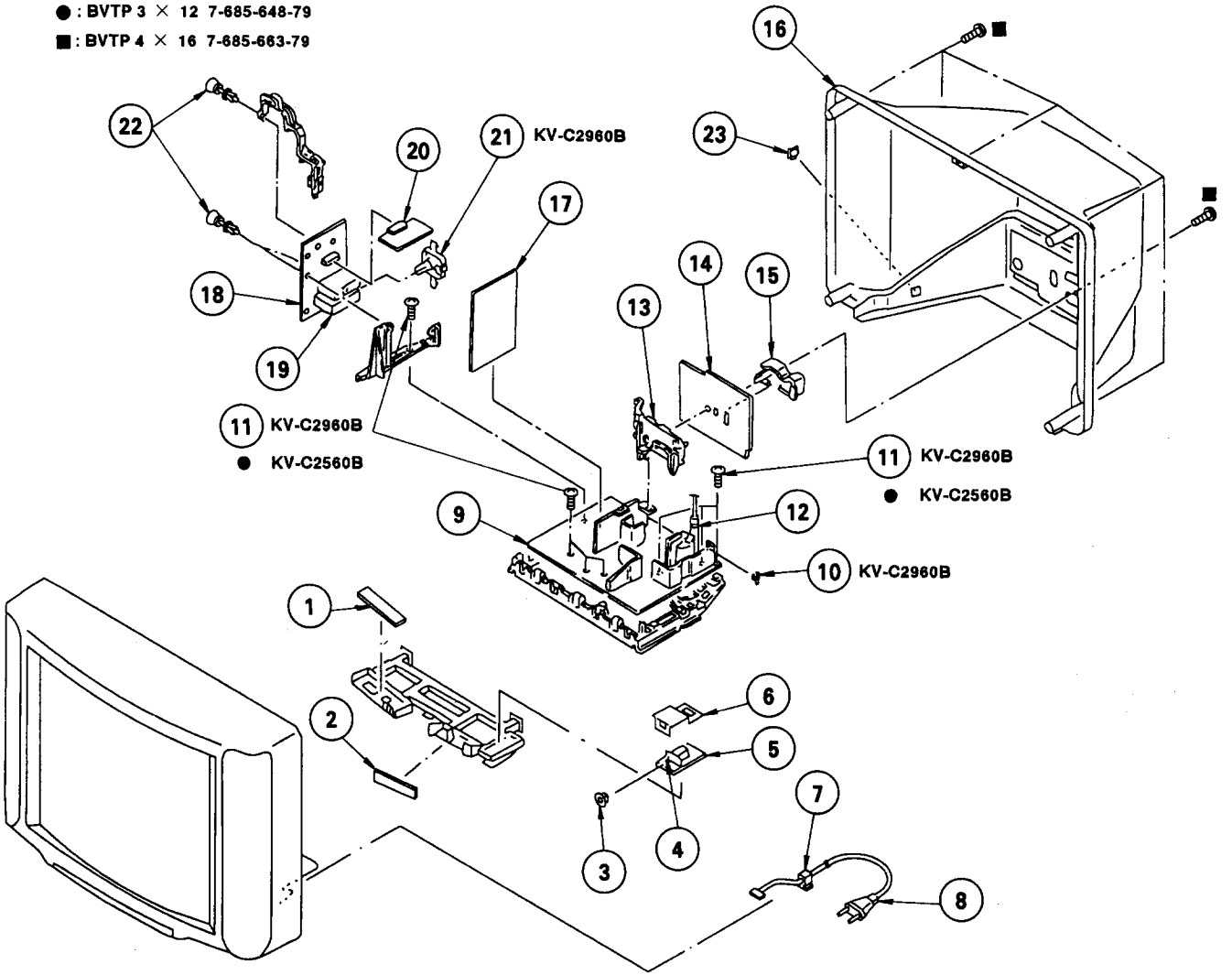

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

## 6-3. CHASSIS (KV-C2560B/C2960B)

● : BVTP 3 × 12 7-685-648-79

■ : BVTP 4 × 16 7-685-663-79

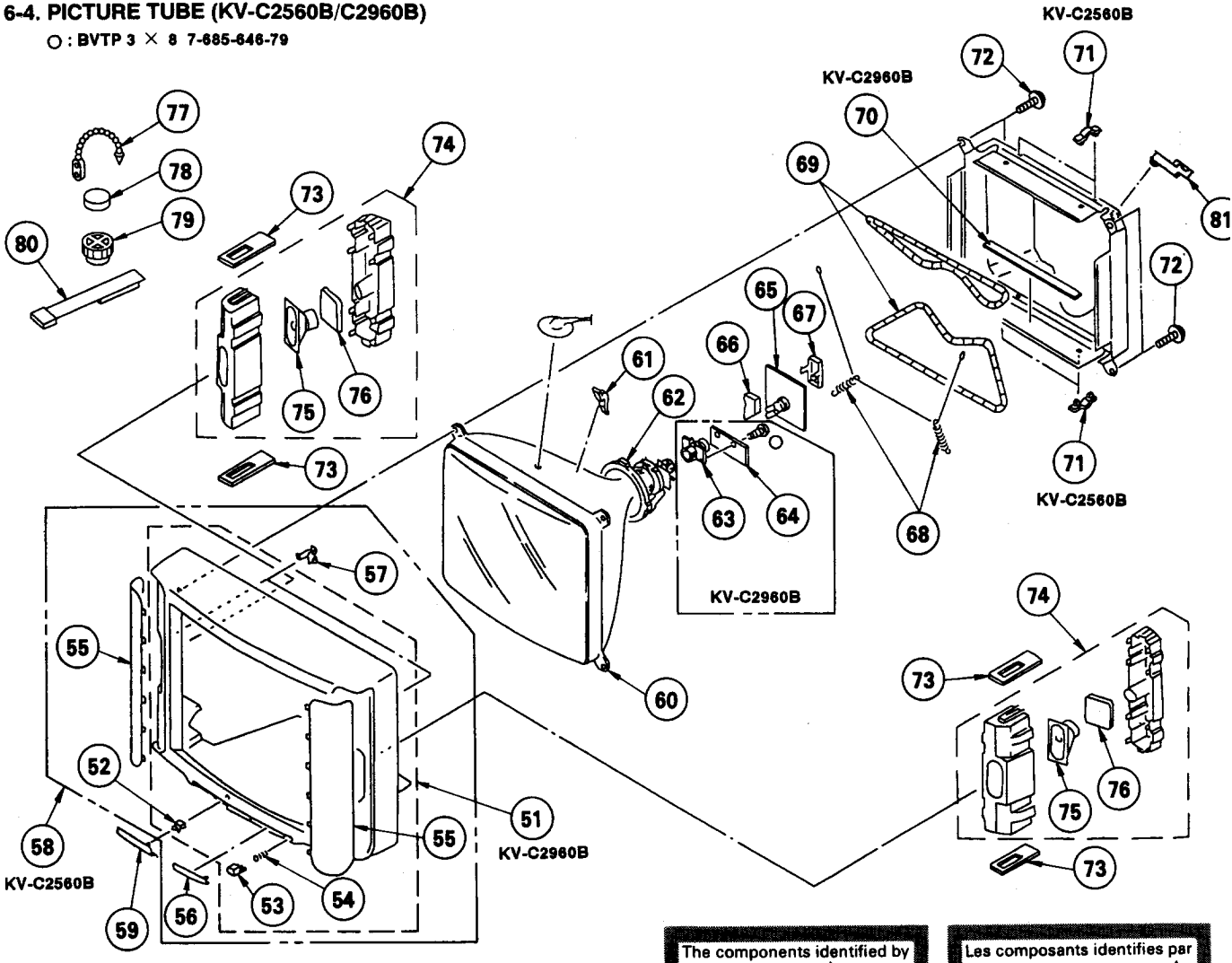



Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

## 6-4. PICTURE TUBE (KV-C2560B/C2960B)

○ : BVTP 3 × 8 7-685-646-79




The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.